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EDITORIAL NOTES.

THE END OF THE YEAR.

With this number of your JOURNAL ends the sixth year of its life. With this month, too, ends another year in the life of every one of us, for no matter when the birthday may come, we instinctively, as did the ancients, measure our years—that which man calls time—by the changes upon the great sun dial of nature. The six years that have passed have been very notable ones in American medical history. They have seen the reorganization of the entire medical profession of the United States. They have witnessed the growth and development of the American Medical Association to a point where it has become the largest and probably the most influential medical organization in the world. During their passage the *Journal of the Association* has become by far the most comprehensive and in many ways the foremost medical journal published. To mention the fact that during this period the death knell of the fraudulent nostrum has been sounded by the Council on Pharmacy and Chemistry, is but to state a fact now recognized by all. Medical education has been almost revolutionized in about the same period, and the results of the work of the Council on Medical Education will be more far reaching than many of us can at this time realize. Six years ago there was no thought taken of the necessity of popular education on things pertaining to public health; today there is not a state in the Union in which such popular lectures have not been given and the work is growing and becoming systematized. In our own state this brief period of years has seen many changes. Our State Society has grown from a mere handful of men to an organization including within it nearly two-thirds of the active practitioners in its territory. Its component parts—the County Societies—have become, in many counties, factors of the greatest importance and benefit to their respective communities. There was a time when a certain insurance company sent out a circular to the effect that the three-dollar cut-rate fee for examinations had been accepted by physicians in all the United States "except California and some of the Southern states"; but it was *not* so accepted. Your JOURNAL has been in the thick of many fights and has become known in every city in the land as the mouthpiece of a society that is strong enough to fight (actively) for what it knows to be the right—and in spite of many threatened libel suits. The great American bluff does not always work. Troubles there have been, of course; there will always be troubles, large or small. It was a hard fight to keep going and pay bills, after the fire, and the loss is still most keenly felt; yet the JOURNAL is alive and the records of the Society are being slowly reaccumulated. The past year's business depression has touched us with no light finger; but we will make out to live in some fashion—and to keep on fighting for truth and honesty. And so the years go. May those to come bring to us harmony, prosperity and happiness; the little troubles will soon be forgotten.

INSULTING TO US ALL.

The culmination of insult upon insult heaped, not alone upon every citizen of California from San Diego to Crescent City, but upon every American citizen, was reached when Francis J. Heney was shot down in court during his trial of Abe Ruef in the United Railways bribery case. For months the law has permitted, and many citizens have applauded, not the trial of those indicted for crime, but the trial of judges, attorneys for the prosecution, witnesses, prospective jurors and every one who raised his voice for decency, honesty and right. The whole social structure of the state has been almost openly debauched by the "higher-ups" until, as Charles Wheeler said at a mass meeting on November 14th, it has become a mark of distinction for a wealthy man to enter social life with his dress clothes plastered with indictments. Nearly every influential paper in the state has been almost openly bought by the wealth of the bribe givers. Heney has been reviled, ridiculed, cartooned, slandered and abused in a manner to excite the anger and the active resentment of every decent, clean-minded man. And for what? For his effort to try and convict *a self-confessed criminal and those who paid him bribe money!* And for whom has Heney been fighting? Not for himself, for he has not been paid a cent nor is to receive anything. His fight is for you and for me; for

honesty and justice; to secure equal punishment for rich or poor when an honest administration of justice has been prevented by bribery. Already every effort is being made by the "higher-ups" and their purchased press to create the impression that Haas was crazy. Possibly so; and possibly he was afflicted with the same form of insanity as the men who tried twice to get rid of the pivotal witness by dynamite. Our higher-up judges, "friendly" to the machine and to wealthy corporations, its friends, eagerly seize upon the slightest technicality to release *self-confessed criminals,* while at the same time they deal out contemptuous comment upon an honest judge trying honestly and in the face of the strongest pressure, to do his simple duty. How long will the thinking people tolerate this assassination of justice and travesty on law and order?

GERMAN HOSPITAL.

On another page of this issue, the JOURNAL presents a communication from one of the members of our society upon the subject of the editorial contained in the October number and referring to the German Hospital. Some of the criticism voiced by our correspondent is just; some of it is ill founded and some part of it will doubtless always remain in the debatable territory. The German General Benevolent Society was founded as, and we believe in the main has always been conducted as a true benevolent institution that has been of the greatest benefit to a large number of its poorer members. As a part of its work, a hospital is required; recently it erected a magnificent building that will accommodate something over two hundred patients and, we understand, accumulated an indebtedness of several hundred thousand dollars in so doing. At the very outset we may concede without argument that it is a shame that a feeling of resentment and antagonism should exist on the part of a large number of physicians against the institution and thus prevent them from making use of the hospital. At the same time we must concede that there exist in the institution certain very objectionable features which fully account for and warrant the antagonism of the majority of our profession. An illustration will point out these abuses. It is reported that quite recently a patient consulted a physician in San Francisco who discovered a condition requiring surgical interference. He referred the patient to a surgeon who happened to be a member of the staff of the German Hospital; the diagnosis was confirmed and operation advised and consented to. A proper fee of several hundred dollars was to be charged, and the patient could well afford to pay the fee. But the matter was put off for a short time and during the interval the patient learned that he could become a member of the German General Benevolent Society and thus secure surgical attention free—or on the payment of the nominal monthly charge. He did so. The very same surgeon whom he had previously consulted was thereupon called to operate—for nothing! The existence of the institution, or of its bad features, made it possible for this surgeon to be deprived of his legitimate charge.

LESSONS TAUGHT.

Let us analyze the foregoing case, the facts of which are reported on the best of authority. In the first place, the surgeon was deprived of his honest fee; a fee which the patient could afford to pay. In the second place, the physician who referred the patient to the surgeon has lost a patient, for he may now receive all medical attention at no greater expense than the payment of his dues to the Society. In the third place, the hospital itself has lost money, for the patient paid less for hospital expenses than he otherwise would have paid—and which, be it remembered, he could afford to pay. In the face of facts illustrated by this case (and many others of a similar character might be mentioned) is it to be wondered at that physicians resent the occurrence of such incidents and the existence of an institution which permits them? Several hundreds of dollars were diverted from the regular course into the pockets of the surgeon and no one—save the patient in question—profited by the transaction; and he did not need or require the profit. Membership should be limited to those of very modest income who, in the event that they become incapacitated for work, do not therefore become a burden upon the community. Or, if membership is not thus limited, the right of any member to make use of the hospital facilities without payment, should be abolished. Very few physicians have a large income. They all do an enormous amount of work gratuitously and for pure charity. Is it right that they should be forced to give their attendance to people who can well afford to pay proper fees for it? Furthermore, no person not a member of the Society who reaches the German Hospital through or by means of a physician, should at any time thereafter be permitted to join the Society. If the German General Benevolent Society will make such changes as to prevent any of its members who can afford to pay legitimate fees for medical service from obtaining such service free (cut this "dollar-a-month" business down to those who really need it) and, secondly, if it will further protect the physicians of California by refusing membership to persons who are accustomed to consult and pay fees to a physician, and who can afford to do so, and also to those non-members who may be sent to the hospital as private patients of physicians—if it can and will do these things, then it should receive its full measure of professional support.

HOSPITAL ABUSES.

In his letter, Dr. Kreutzmann opens up the whole question of charity hospitals and hospital abuses. That there are always some people who will and do abuse every charity that has been or could be created, is well known. Every charity hospital that ever was run, has at some time or other been abused by some people. Every

dispensary is treating people, in greater or less numbers, who could and should pay physicians' fees. But that has nothing to do with wholesale abuses that could and should be stopped. The argument made by our correspondent to the effect that the University of California Hospital "is taking money out of the pockets of physicians" by competing with hospitals owned by physicians, is too lame for serious discussion. That is purely and simply competition on commercial ground; if a physician starts a private hospital it is his venture in commercialism—he is doing business—has become a business man subject to business or commercial competition; the running of a hospital for a profit is in no way a part of the liberal profession of medicine. In the case of the particular hospital mentioned, it is not a commercial enterprise; it is not founded for nor to be operated for the purpose of making money. If one enters here and pays fees, what he pays goes to help in maintaining the hospital for the use of those who cannot pay. Furthermore, the University of California Hospital and the Lane Hospital give back to the people of the state a large return; they are teaching institutions and they aid vastly in the training of our medical students. Where does the medical world profit—and through it all the people—from the immense amount of material that is passing through the German Hospital and its ilk? Occasionally some member of the staff of such an institution makes individual contribution to medical knowledge; but this is rare; in the main, it is wasted.

ELECTION RESULTS.

Nobody took much interest in the presidential election, but a good many people were very much interested in the campaign of Hughes of New York. The people won. Probably of next importance was the judiciary contest in San Francisco. An honest judge was elected, against almost impossible odds, and one who had lost the confidence of the people was defeated. Occasionally we contemplate the spectacle of the average citizen yawning, stretching himself and getting up to go out and vote; and then he lapses once more into troubled somnolence. But the "machine" never sleeps; and so, never has to rouse itself. It works all the time; and thus it gets what it wants and the "average citizen" rubs his eyes, when it is all over, and wonders how it happened—or else swears at the "machine" instead of at himself. Let us thank the good Lord that the "machine" is no more grasping than it is, for we are at its mercy.

THE RECENT CONGRESS.

The many reviews and published reports of the recent International Tuberculosis Congress but accentuate the utter impossibility of completely presenting the results of such a large and unwieldy aggregation. There is no point of perspective. Viewed broadly, the Congress was an immense success from the sociologic point of view. It attracted the notice and the attention of millions of people to preventive work in tuberculosis. Most of the countries of the world were spurred to extra work on this particular subject, and even our own national government actually produced some matters which will tend to favorably affect public health—a thing almost unprecedented (of course excepting the work of the U. S. P. H. & M. H. S.). Many thousands of people were attracted to the exhibits and doubtless some few learned that it is no actual loss in dollars and cents to provide their tenants with sufficient light and air. In all the sections was a singular unanimity of expression of the all important necessity of educating the public, which may be taken as the key note of the congress. Much space has been given to the contention between Koch and everybody else, in nearly all the journals, and the subject seems hardly worth it. Were Koch a less notable figure, were it not for the fact that he discovered the bacillus tuberculosis, no great amount of attention would have been given to this difference of opinion. Twice has he changed his mind and he may do so many times again; that will in no way affect the facts that are known or will be discovered. Discussion upon matters of mere opinion is a sad waste of time. Furthermore, it is immaterial whether the bovine bacillus produces pulmonary consumption in man or not; it is admitted that it does produce other forms of the disease in man, and all are equally undesirable. Tubercle bacilli in milk do not make it more appetizing. A tempest in a tea pot, forsooth. If a man is right, time will prove it; if he is wrong, the fact will in due course be known, and this whether the whole world is with him or against him.

A CURIOUS CONDITION.

For the first time in the history of the state, if we are correctly informed, a physician has got out an injunction to prevent a committee on ethics of a medical society from investigating charges made against him. In San Francisco, it is reported, Dr. Canac-Marquis was charged with having agreed to and attempted to perform an abortion. The matter was referred in the regular way to the committee on ethics and the doctor was duly notified. He immediately went into court and asked that the committee be enjoined from interrogating witnesses or in any way proceeding with the investigation. Owing to faulty wording of the by-laws and to the fact that the charges were not correctly presented, the injunction was made permanent. What will happen next?

DIAGNOSIS OF SYPHILIS.

We are beginning to hear quite a little of the serum diagnosis of syphilis, though it is as yet a very long way from being an everyday possibility. Nevertheless, as a definite scientific advance it seems to have passed the stage of question and is to be accepted as a fact. The Wassermann method, so-called, which is based upon hemolysis, is, for practical purposes, impossible. It is quite possible, however, that the serum method of Fornet and others will subsequently be

demonstrated a safe and reliable test. It is based upon the formation of a turbid ring at the junction of two sera, the one taken from an active syphilitic the other obtained from a late convalescent or one in the ataxic stage. This method appears to be promising, for it certainly has simplicity to commend it and so should soon receive enough attention to bring out reports that will be conclusive. The last few years have shown marked advances in our knowledge of this aggravating disease, and from the present general interest in the work on syphilis we may safely predicate still further and more valuable discoveries in the immediate future.

"CAN THIS BE TRUE?"

In asking this question, the *St. Louis Medical Review* refers to an editorial published in this JOURNAL some little time ago in which the statement was made that no physician had the knowledge or the ability to determine whether or not the statements of a manufacturer in regard to his preparation were true or false. Physicians are not chemists; nor yet are they pharmacologists, and if they were they are far too busy to undertake long and tedious analyses to find out the composition of the remedies they are asked to use. This work the Council on Pharmacy and Chemistry does, gratuitously, for the whole medical profession, and the JOURNAL urged that we should believe only the Council, for the reason that all manufacturers had, at some time and in some instances, lied to us. The JOURNAL said "You cannot depend on your own judgment, for you do not know enough to judge." Once more we submit that that statement is absolutely true. The *St. Louis Medical Review* was, at one time, edited by a scholarly gentleman; one who knew, as the present editor does not, that the first rule of journalism is to refrain from mentioning the editor of a publication by name. We do not know who the present editor is, and in spite of his threat that we shall "hear from him in the shape of physical retaliation," we beg to advise him that he brays like a Rocky Mountain nightingale and that *he* is absolutely incompetent to judge of the composition of the remedies he is asked by the manufacturer to use. As he advertises, among others, anasarcin and the Peacock line of nostrums, however, we suspect that his judgment is all right when it comes to determining the number of cents in a dollar. On your way, and trouble us no more.

HEMATURIA WITH REPORT OF CASES.*

By GRANVILLE MacGOWAN, M. D., Los Angeles.

The manifest presence of blood at the mouth of the urethra, or mixed with the urine, is a symptom which alarms the person in whom it occurs, and not infrequently terrorizes his medical attendant. To be of value any treatment for this condition must follow upon a knowledge of the source of the hemorrhage.

Until of very recent years there was much of the occult about hematuria. With most learned and scientifically ponderous reasoning, consulting physicians, commonly by deductive analysis, fixed upon the bleeding spot, and then often, by operation, or post-mortem section, proved what poor guessers they were. This good work still goes on, though the means exist by which surmising as to the origin of the hemorrhage is, except in the rarest instances, rendered unnecessary.

By the agency of urethrascopes and cystoscopes of various patterns it is readily possible to explore the urethra, the bladder, the ureters and the pelvis of the kidneys, and exact information of the cause and the place of a hemorrhage of the genito-urinary tract may be obtained in nearly every case.

In many books rules for differential diagnosis in cases of hematuria may be found: by the color of the blood; the size and shape of the clot; the chemical analysis of the urine; whether the blood precedes, is mixed with, or follows the urinary stream; the source of the hemorrhage is sought to be established. None of these features have any exact worth, for hemorrhage from a kidney may be so profuse that it is pissed almost arterial in hue, being very rapid, one bladderful may be hardly expelled before the necessity of urinating is again present.

It is true that when blood appears at the meatus in intervals of urination the source of the hemorrhage is nearly always in front of the deep transverse perineal muscles; but to this there are frequent exceptions, many of them striking.

1. 2/25/08. S. M., 82 years old, retired merchant, sent to me by Dr. Rogers of Tucson, has retention and profuse hematuria. Two months ago his first hemorrhage occurred suddenly and was followed by retention. He has had three attacks; the present one has now lasted a week, and has been very severe —the urine is full of clots. There is retention to 400 cc's. He strains, and passes a little urine at times. Blood appears, sometimes, at the meatus, in the intervals between urination or the use of the catheter. 2/27/08. Perineal section, and removal of a carcinomatous prostate; the left half of the prostate was already loosened from its capsule and nearly destroyed by the disease. He was up and about in ten days with the wound closed. At the end of the second week renewal of the hemorrhage tenesmus, and invasion of the perineal scar by the growth, necessitated sectio alta and permanent drainage, since which he has been comfortable.

When blood suddenly appears, at or toward the end of urination, in a previously clear stream, it is reasonable to place its origin, either in the bladder close to the outlet, or within the prostatic urethra,

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* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

or from the prostate. It is often of importance that this shall be accurately determined, and it can only be done by the use of an instrument through which we can see; for sometimes, in a typical condition of this sort, the blood comes altogether from points anterior to the membranous urethra.

2/6/08. Mr. B. B., 40 years of age, rancher, single; sent by Dr. Sheppard. In January, 1908, he noticed smarting upon passing urine, this was followed in a week by painful hematuria, the blood apeparing toward the end of urination. His general health had been bad for two months, and he had lost fully fifteen pounds in weight. Inspection of the urethra through a small endoscope, 20 F., showed many granular patches, which ceased in the posterior portion of the bulb. The right side of the prostate was harder than the left. When urine was passed in three glasses, the centrifuged sediment of the last glass did not contain any blood. Search for tubercle bacilli, and the guinea pig test proved negative. The hematuria has ceased, and his general health appears to be restored by gradual dilation of his urethra and the application of strong silver solutions, through the endoscope, to the granular patches.

It is also true that, often, in moderate hemorrhage from a kidney, at intervals the blood coagulates in the ureter, and lies there long enough to become partially fibrinous before it is dislodged, causing the appearance of long, thin, fishworm-like clots in the urine from time to time; but I have seen very similar clots occur in slow hemorrhage from villous growths situated in the bladder near the ureteral mouths, where the jets of urine projected steadily against the bleeding point caused the clot to wave back and forth in the urine, like kelp in the rise and fall of the tide. I have seen a slow hemorrhage from an overlarge, congested or ulcerated, verumontanum, which blocked up the natural free passage from the prostatic urethra to the bladder, prevented the flowing of the effused blood into that viscus, and hindered any forceful outflow of urine at the time of emptying the bladder, produce clots, that in no way could be distinguished from those which form in the ureters.

In the course of extra peritoneal operations for renal hemorrhage I have several times watched the blood issue from the pelvis of the kidney and pass down the ureter in a long undulating series of successive small clots, or descend in frequent waves which did not clot at all.

2. Dec. 8/1900, H. E. W.; 35, patient of Dr. Stoddard; occupation merchant; had a profuse painless hematuria in 1892 following heavy lifting; this was repeated later after an exciting coitus but ceased without treatment. Two months ago, after a fever accompanied by chills, there came an attack of dysuria—and the appearance of blood in the urine at the end of urination. The hematuria in a few days became profuse, was accompanied by paroxysmal pain in the back, and tenderness on pressure, particularly in the right side. In two months he had lost thirty pounds and become gravely anemic. Upon cystoscopic examination blood was seen coming from the right ureter. October 22nd nephrectomy through an Abbé incision. The ureter was inspected on the up-rolled peritoneum. Blood could be seen coming out of the pelvis of the kidney and passing down the ureter in interrupted spurts; it would clot about halfway down, and the clots then squeeze toward the bladder, their place being taken immediately by those following. This kidney was soft, deeply congested, and bled inordinately upon section. It looked purpuric. Many sections from it were examined by Dr. Black; no definite pathological change was found in it. But the man got well, and remains perfect in health until this writing.

The seat of hemorrhage may be: 1. The anterior urethra; 2, posterior urethra and prostate; 3, seminal vesicles; 4, bladder; 5, ureter; 6, kidneys.

Hemorrhage from the anterior urethra may arise from: mechanical injury, gonorrhea, stricture, warty growths, tuberculous ulcers.

(2) Hemorrhage from the posterior urethra may arise from: enlarged or inflamed verumontanum, posterior urethritis, inflammations of the prostate; which may be gonorrhœal, tuberculous, from mixed infections; or arise from syphilitic gummæ or cancer, stone or mechanical violence; and the source of the blood may be a seminal vesiculitis.

3. Hemorrhage from the bladder may arise from: cystitis, usually trigonal; edema of bladder neck and interureteral fold; ulceration of projecting adenoma of the prostate, non-malignant; stone; tuberculous ulceration; simple ulcer; patchy gonorrheal cystitis; talangiectasis of the posterior slope between the vesical outlet and the ureteral openings; new growths, simple and malignant; bilharzia; mechanical violence, frequently from sounding.

4. Hemorrhage from the kidneys may be from: tuberculosis; essential or without appreciable cause; nephritis; violence; stone, sometimes in form of uratic or oxalate showers; malignant growths; papilloma, angiomatous degeneration of a papilla; disease of the adrenal; movable kidney.

5. Or hemorrhage may arise solely from diet, drugs, hemophilia, or degeneration of the blood due to disease, as in variola, typhoid and malaria.

6. Hemorrhage from the ureter may come from the presence of stone; new growths; tuberculosis.

V. Hemorrhage from the anterior urethra due to mechanical violence is commonly either self-inflicted, occuring in the very young from harsh handling of the penis or the introduction of articles used for purposes of masturbation, or curiosity; or follows in the adult from narrowing of the channel by the cicatricial contracture of stricture, and sometimes quite severe hemorrhages follow the introduction of sounds or exploratory instruments, even when the greatest gentleness is observed. Again, in many cases of stricture the hemorrhage takes place before the introduction of any instrument and is, whether it be little or great, the source of the seeking of surgical advice.

4. 4/1/08. J. E. B., 66 years old, a strong and healthy man, had two months ago an alarming hemorrhage from the urethra, following urination, but without any antecedent symptoms. He consulted a surgeon who catheterized him, gave deep urethral instillations, assured him that his trouble was an enlarged prostate, and prepared to operate upon him therefor. Lack of confidence in his adviser, brought him to me. I found a stricture 18 F., at the meatus, and a much tighter one, 14 F., 12 cm. from the meatus, which bled as the searcher passed through it. The prostate and vesicles were abnormally small and soft, through the rectum. There was no residual urine. The strictures were cut freely, by internal urethrotomy and through an in-

cision made at the apex of the prostate, for drainage and exploration, by touch and by sight, the prostate and vesical neck were found to be entirely healthy.

5. 1/10/08. C. W. S., mining broker. Has recently noticed loss of sexual desire and has some blood in the urine; urinary frequency, diurnal 7-8, nocturnal 3-5; has been in habit of withdrawal or using a rubber condom in coitus; has tight multiple urethral strictures, 16 to 22 F., in anterior urethra, which bleed freely upon being disturbed with anything. Gradual dilation, and the application of 25% solution of silver nitrate through a small endoscope, overcame the hemorrhage, and has restored his waning sexual power.

It is not necessary to dwell upon the hemorrhage in the acute stage of gonorrhea; or in rupture of the anterior urethra; as the source of the blood in the urine is obvious in these cases. Growths within the urethral canal are nearly always warty or polypoid; either may bleed freely at times; and the locating of the resulting hematuria, without optical search of the channel, may be quite puzzling, for, if it be free, it may be sufficient to color the urine in all three glasses.

6. 2/16/08. C. A. B., capitalist, 36 years old, has morning drop and occasional bloody urine. He has had several sharp attacks of hematuria, blood being present at the start, during, and after the finish, of the act. He was supposed to have a growth at the vesical outlet. Examination with the urethroscope discovered the presence of a small polypus just in front of the triangular ligament. This disappeared after several cauterizations with 25% solution of silver nitrate.

Tuberculous ulceration must be taken into account in estimating the probable cause of the presence of blood in the first flow of urine. The diagnosis is commonly easily made by the fact that such disease almost never stands alone, but is a sequel to a long advanced tuberculous disease of the urinogenital tract higher up.

If the blood comes from some trouble in the urethra posterior to what is called the cut-off muscle, in the absence of an unduly large or congested verumontanum, or of an inflammation of the prostate with its accompanying pain, some of it finding its way into the bladder, renders an opinion of its origin uncertain. An expression often heard in diagnosing the source of a hematuria is, "it comes somewhere from the neck of the bladder." That somewhere may be: anywhere in the urethra posterior to the deep transverse perineal muscles; in the substance of the prostate; within the drawstring of the mucous membrane covering the muscular tissue of the inner sphincter of the bladder; or in the mucous membrane of the bladder, and within 6 cm of its outlet. Such hemorrhages may be painful. Whenever the basis of their cause is an acute inflammatory condition they are painful; sometimes excessively so as is illustrated in acute gonorrheal affections of this region, in tuberculous ulceration, and in calculus impacted within the entrance of the urethra, or lying in the trigone. In confirmed masturbation, or in those subject to any prolonged irritation that occasions rapidly repeated congestion of the sexual centers, an enlargement and permanent congestion of the caput gallinaginas takes place. This slows and obstructs the flow of urine, and the spasms induced by efforts to expel the last few drops often give rise to noticeable hemorrhage at the end of micturation; and from continuance of the hemorrhage in the intervals, the blood may flow back into the bladder, and also clot in a long plug in the urethra, giving rise exactly to the phenomenon of fish-worm clotting one sees so often in hematuria from a renal source. A feeling at the end of urination of "something in the urethra like a cork," and a burning pain over the pubic bones is often complained of.

7. 3/27/08. W. T. C., 47 years old, grain buyer, has great urinary frequency, suffers from emissions and has at times bloody urine, the blood preceding, being mixed with and following urination. In addition there is strain, and a feeling for fifteen minutes after urination, of the presence of a body about the size of a pea in the posterior urethra.

Urethroscopic examination shows the bleeding to come from a large verumontanum which contains a tumor the size of a small pea. This I shall remove later through a perineal incision.

There is often a high grade of tenesmus in these affections of the bladder neck, and in no instance is it exemplified better than in cases of calculus in which the stone is shaped more or less like a letter L, one branch being formed in the prostatic urethra occupying and distending the vesical outlet and joined, in the sensitive trigone, by a cross branch which may be partially imbedded in the bladder wall. I have seen three cases of this kind. They all had bloody urine and led lives of continuous torture. They all leaked after the removal of the stone.

8. 8/25/07. M. C., farmer, 58 years old, patient of Dr. Garcelon. Has had severe dysuria, and at times hematuria, for several years. Recently the tenesmus has been unbearable, and the pus and blood abundant. His health has failed rapidly from pain and loss of sleep. The calculus can easily be felt with a stone sound in the prostatic urethra. 8/27 Lithotomy:—median perineal incision. The stone was large and imbedded in the left side of the prostate, and was continuous, through the neck of the bladder, with a large branch that was imbedded in the wall of the bladder on the left side of the base. It was a hard and extremely rough phosphatic calculus and was crushed and removed with difficulty. Recovery from the operation was speedy, but the full power of retention has never been restored.

Ulcerated syphilitic gummata, malignant growths, and mixed infections of the prostate, in addition to the diseases already mentioned, act as the causes of the appearance of blood in the urine. Gumma of this region are rare. I have seen two; both ran a typical course, occurred in men past the prime of life, were painless, and were accompanied by lessened sexual power, which was really the cause of the patients' anxiety. The hemorrhage was slight, but present in any specimen of urine passed until the disappearance of the lesions. Both required long use of iodine and mercury, in addition to massage and the application of silver solutions to the ulcerated prostatic urethra, through the endoscope. As an instance of mixed infection with ulceration the following case may serve to illustrate.

9. 8/17/07. J. R. S., 40, merchant, widower; sent to me by Dr. Hunter. Had gonorrhea two years ago, with extension to prostate, bladder and epididymis.

Has seen no discharge for more than a year, but the wish to marry again has made him desirous of ascertaining if the cure has been complete. A few shreds in the first glass, which contain no gonococci. Some blood and pus in the second glass. Has noticed blood in urine at times. Anterior urethra healthy; prostatic urethra congested on right side; bladder healthy. The right side of the prostate is the larger, nodular, and a fluid containing blood and pus is readily pressed out of it. The spermatozoa are motionless. Stains for the tubercle bacilli and gonococci negative.

4/14/08. I have treated him by prostatic massage, dilation of the prostatic urethra, irrigation and local applications, together with internal medicines, weekly, since last August, with improvement, the bleeding is less, the spermatozoa are now large and active, and the prostate less hard, but the infection still persists. In February for the first time we found gonococci. A culture prepared this month by Dr. Martyn shows the infection to be a mixed gonococcus and staphylococcus albus one. He shall receive the vaccine treatment.

An entirely typical example of malignant disease of the prostate as a cause of hematuria is given in the very first case cited in this paper. It is noticeable that pain was not a marked symptom in any of these cases. But the presence or absence of pain is not constant, and not to be depended upon in a differential diagnosis. Though many symptoms are common to prostatic and vesical hemorrhages it is often only after the most rigid examination of the whole urethra that the bleeding can be positively located in the bladder.

The hematuria from mechanical injury to the deep structures of the perineum, urethra, and prostate arises soon after the violence and always requires perineal section as a protection against urinary infiltration, and frequently for the control of the hemorrhage.

10. 3/14/03. M. W., 73 years old. Five days ago in stepping out of a buggy he fell astride of the wheel. He was instantly seized with a desire to urinate, but could not. He was taken home and his physician passed a catherer without great difficulty, and succeeded in doing so the following day but with great difficulty. The urine was very bloody. This catheter was left in position for two days, but becoming filled with clots it had to be removed and then could not be replaced. When he was brought to me no urine had passed for 36 hours. A slight amount of blood was present continuously at the meatus. Perineal section disclosed a complete fracture of the urethra. The distal end was found 6 cm. posterior to the anterior. The bladder was evacuated of blood and clots and the two torn ends of the urethra trimmed and united on the roof with fine catgut. Uneventful recovery.

The most common cause of vesical hematuria is the congestion accompanying simple vesical inflammation, cystitis, more especially cystitis of the trigone. The causative influence of the cystitis may be the gonococcus, in which case the bladder will eventually be the seat of many patches of intense inflammation and sometimes of ulceration; the colon bacillus; the pus producing cocci; the typhoid bacillus; or the bacillus-ærocapsulatus. Once in a while the pathological change noticed will be a velvety edema of the interureteral fold, and all, or a portion, of the mucous membrane about the vesical outlet. This is due to the interference with the venous circulation, and is particularly prone to occur in women who have displacements of the uterus. As an example I cite the following case:

11. 1/7/08. Mrs. S. S., 58 years old, came to me with diagnosis of stone or tuberculosis; has excessive urinary frequency with pain, which commenced about three years ago, and has progressively become worse, until it is now every fifteen minutes during the day, and hourly at night. The urine is frequently bloody. She has prolapsus of the uterus, a large cystocele, and a rectocele. No ulcer or growth in urethra. Cystoscopic examination:—no stone, growth, or ulcer; but an intense cystitis with edema, most marked on the right side. Urine alkaline, contains blood, pus, and bacteria. Total solids 8 grammes for the 24 hours. Under spinal anesthesia we amputated the cervix, repaired the perineum, and raised the bladder base. 3/30. The bladder will now hold from 90 to 150 cc without pain.

All of these cases are painful, and all are of everyday occurrence and easily detected by the cystoscope.

There is, however, another condition which occasions much vesical irritation, frequency of urination, and sometimes hematuria, but not often any definite pain:—in this the capillaries of the posterior slope of the bladder, from the vesical outlet to the ureteral openings, become greatly dilated and increased in number, veritable masses of blood vessels that look like the fine red mosses of the sea, when viewed through the clear liquid in the bladder. I have never yet been able to satisfy myself as to the cause which works to produce this telangiectasic condition, or to devise a method for its cure.

Tuberculous ulcers of this region frequently occasion severe hemorrhages, and, as in the case of ulcerations from other causes, microscopic investigations will discover blood in the urine so long as they are unhealed. In the acute genito-urinary tuberculosis which one sees often enough attaching itself upon a subacute or chronic gonorrhea in young men between 15 and 25, the hemorrhages from these tuberculous ulcers of the trigone and vesical outlet are peculiarly distressing, alarming, and depressing. The urine is expelled every few minutes with spasmodic contracture of the abdominal muscles and intense pain, blood comes in it and blood comes after it. The sick man becomes so absorbed in the presence of the blood, and so horror stricken by it, that he forgets all of the other symptoms and begs only to be relieved of the hemorrhage.

12. 3/12/1898. Wm. V., aged 19 years, single. Contracted gonorrhea two years ago from which he has never recovered. He has had great urinary frequency for a year, together with hematuria. Urination takes place every 15 minutes; clots are passed with the urine, and fluid blood follows it each time; the pain attending the act is atrocious. He is emaciated, pale and feeble. The treatment he has received has been barbarous, consisting of distention of his bladder by strong solutions under high pressure and the passage of large sounds. The urine contains gonococci and tubercle bacilli. The prostate and seminal vesicles contain tuberculous nodules. His bladder capacity, under chloroform, is 120 cc. Numerous tuberculous ulcers could be seen with the cystoscope on the fundus and in the

trigone. By appropriate treatment this boy improved so much that he was apparently well by September of the same year. In December he contracted gonorrhea a second time. This extended promptly to his bladder, giving the excuse for a fresh outbreak of his tuberculosis; terrific hemorrhages followed. Later he was attacked by tuberculous meningitis from which he died in March of the following year. His chief complaint was always the hematuria.

In dilating strictures, and in stretching the urethra for the better attack upon chronic purulent infections of its glands, many make the mistake of depressing the handle of the instrument well down between the thighs, thus bringing its point violently against the vault of the bladder, and producing bruises or abrasions which afterward form ulcers, and become the seat of tuberculous infection. I have seen many such cases and when present they are naturally always accompanied by the presence of blood in the urine.

13. 8/7/1893, J. T. C., 27 years old, coachman. An attack of gonorrhea in 1891 was followed by spasmodic stricture. Following exposure to rain and cold came a cystitis which was treated by sounds and severe injections, at the hands of an incompetent. Present frequency, every twenty minutes; bladder capacity 40 cc. Urine always bloody. It was the habit of the operator to force the sound in, depress the handle between the thighs and keep the instrument there for five or ten minutes each day. I put his bladder at rest, and, after the subsidence of the very acute symptoms, a cystoscopic examination was made. There were three large ulcers on the vault, where the point of the sounds introduced in the manner described would naturally touch; originally traumatic, they had become tuberculous. There were many miliary tubercles to be seen in the bladder. The man eventually was cured, under appropriate medical, and surgical, treatment.

In old men who suffer difficulty in urination from an obstruction due to an encroachment of a growth in the prostate pressing upon the canal, hematuria is a very frequent symptom. It may come from simple congestion, the hemorrhage arising by the breaking of an enlarged blood vessel by muscular strain or by pressure; or it may be primarily induced by clumsy or unfortunate efforts at catheterization; or by the violence occasioned by the efforts to expel hard fecal masses from a distended rectum. While the presence of hemorrhage, in a case of enlarged prostate, is by no means to be interpreted as a sign of malignant degeneration of the gland, yet it may always give occasion for thought. It is often severe and long lasting when due to an ulcerated surface occasioned by muscular force applied at intervals to some boss or lobe protruding into the urethra, or projecting upon a pedicle into the bladder.

14. 9/18/07. H. B. S., 78 years old, college professor. Has had urinary frequency and obstruction for several years; ill and confined to bed for two months. Urine, blood stained; tenesmus extreme; hemorrhage at times very severe. 10/14, cystoscopic examination shows a pedicled tumor, ulcerated and bleeding, projecting from the left side of the prostate, into the bladder. 10/15, perineal prostatectomy and removal of growth. Miscroscopical examination by Dr. Black demonstrated it to be a simple adenoma which had undergone inflammatory changes. Perfect recovery of bladder function.

The most natural place to discuss hematuria due to the presence of stone in the bladder is in juxtaposition to that following tuberculosis, for the latter mimics the former, in all of its symptoms, so closely that many a man has been, where dependence has been placed upon the classical symptoms, cut open for a calculus that did not exist. Of course the two conditions may exist together, which is doubly distressing.

I have seen vesical stones, almost pure urates, so smooth that I can conceive how they might lie in a healthy bladder for a long time, and gradually increase in size, without causing cystitis or hematuria. But in an experience of about 150 vesical calculi I have in each case found blood present in the urine, but not by any means always in quantities that could be recognized by the naked eye. But to be sure of the presence of stone one must either strike it with the searcher, see it with the cystoscope or grasp it bimanually.

In the absence of Bilharzia and hemophilia about the only other cause of hemorrhages from the bladder is a new growth, either malignant or non-malignant, and the difference is often difficult of distinction; for all tumors occuring in the bladder are, however innocent they may appear, under the ban of suspicion.

In a papilloma the bleeding is usually symptomless. In a carcinoma or epithelioma it may be painless or painful, according to the amount of infiltration and stiffness of the detrusor, and of the presence or absence of ulceration and vesical infection. In either case the hemorrhage is apt to follow compression or tearing of the tumor by forcible contraction of the muscles of the abdomen upon the bladder, that viscus being partially filled with urine, and the muscular effort being great; usually in the effort to avoid a blow or jolt or a fall. After an interval of rest the hemorrhage may subside entirely and the case remain symptomless for years and then another and freer hemorrhage take place.

15. 3/14/06. G. R. C., 60 years old, speculator. Four years previously he had a severe hematuria which lasted two weeks. In February of this year he helped lift a heavy loaded wagon from a rut where it was mired, and immediately afterward passed a large quantity of bloody urine. This also subsided under rest, and the use of ergot and hammamelis. He consented to a cystoscopic examination, at which time a large and long-pedicled papilloma was found. Operation at the time was refused, but later requested, during an intense hemorrhage in June of the same year; this also followed great exertion. The tumor was removed by excision through a supra-pubic wound. The man is still alive and there has never been any more bleeding.

The painless hemorrhage of carcinoma of the bladder before infection is very well instanced in the case which follows:

16. 11/26/04. Mrs. George S., 67 years of age, patient of Dr. Follansbee. At fifty-nine had her first attack of hematuria, which was painless. After this came other hemorrhages at irregular intervals. Within the past two years any unusual exertion or even the taking of a warm bath would be followed by the appearance of blood in the urine, but there was no pain until about ten days ago. 11/23, cystoscopic examination; a large papillomatous growth with a short, broad pedicle was seen on the right

upper quadrant. 11/29, supra- pubic cystotomy; removal of the large growth and four lesser ones by excision; many smaller nodules were found and destroyed by rongeur and cautery. The large growth was a carcinoma; the lesser ones papillomata. I saw this woman in the spring of 1907; she had been very well, without hemorrhage or pain, in the interval.

But occasionally pain may be complained of from the start in carcinoma, and hemorrhage is irregular and not very great, requiring microscopical examination for its detection. I have noticed this several times where the vault of the bladder was the seat of the affection. The pain is not like that of stone and does not disappear with rest; is constant and in the same place, and is not unfrequently referred by the medical examination to adjacent organs as witness this case:

16. 3/12/08. L. A. McK., 43 years old, mining operator; referred to me by Dr. Rose Bullard. He has suffered for years with pain in the bladder and over the middle of the abdomen, chiefly on the right side. Urinary frequency has been present all of the time and has now increased until it is every fifteen minutes. The pains were referred to his appendix by a medical adviser and in November, 1906, this organ was removed but no relief followed. His urine is acid and contains pus, bacteria and a moderate quantity of blood. With a cystoscope a large growth, with a broad, flat pedicle, can be seen upon the right side of the bladder vault. Operation deferred.

In rupture of the bladder there is always hematuria. This condition is easy to surmise, as it is occasioned almost invariably by great physical violence to the pelvis, and often accompanied by fracture of the pelvic bones. The bladder is usually full at the time of the accident and its contents escape either intra- or extra-peritoneally. In either case some urine is passed from time to time or is withdrawn by a catheter. Fluid introduced will nearly always escape through the laceration. Immediate surgical measures for its treatment are imperative. The tear should be sought, without loss of time, through a supra-pubic opening, which is best made into the peritoneal cavity.

In the hypertrophied bladder of urethral obstruction, if great care is not exercised in the primary use of the catheter, irreparable damage is often done by the too rapid removal of the negative pressure from the blood vessels; the resulting hematuria may last for a very long time, or even be fatal.

Hemorrhage from the ureter: When we see blood puff forth from the mouth of a ureter, like red smoke from the stack of a locomotive, is it possible to speak confidently of the lesion which produces it as ureteral? Except in rare instances, no. This is as far as we can see. Beyond this point the best we can do is to locate a stone, by aid of the magic power of the Roentgen ray, or by the passage of wax-tipped sounds into the ureter. That there is no obstruction, can be told by the free entrance of a catheter to the pelvis of the kidney. But this does not assure us of the nonexistence of a growth, or a tuberculous ulcer, in the ureter; nor is there any essential difference between the attacks of colic induced by the passage of a slough from a tuberculous lesion, a calculus, or a blood clot large enough, or firm enough, to excite nonrhythmical contractions of the tube. Lesions of the ureter itself, a simple sewer pipe, are uncommon, and when a hemorrhage is once located as coming from either ureteral mouth, it may confidently be assumed in nearly every case that we have to deal with a diseased or injured kidney, and this brings us to the discussion of the causes of renal hematuria.

The kidney substance, lacerated or torn by force; its mucous membrane irritated or torn by the pressure of a stone; deposits of tubercle in the cortex with congestion, or in the pelvis with caseation and the formation of slough; malignant tumors infiltrating its tissues; angiomatous degeneration of a pyramid; diseases of the adrenal; displacement, a shower of uratic or oxalic crystals; papilloma, multiple cysts; echinococcus, nephritis, acute and chronic; and sometimes a trophic change, which may not be detected by the microscope, but nevertheless exists and allows the blood to drip through the tissues as water from a sponge; may be the cause of the bloody urine. To these may be added the effects of such drugs as turpentine, phenol and the Spanish fly.

Fracture of the kidney has been known to follow (1) a push or blow against the abdomen or body; the individual moving strikes against some object; or the individual being still, is struck by some moving object. The injury is usually in proportion to the force exerted, but not always. (2) By lateral pressure, the body being caught or squeezed between two opposing forces. (3) By sudden compression of the organ against the spine or ribs in the exertion of great muscular effort; as in wrestling, or severe lifting, in which the person is obliged to stoop and lift directly upward. (4) By transmitted force; the kidney being thrown suddenly, by the tensely contracted abdominal muscles and the diaphragm, against the ribs and the spine. Fortunately the kidneys are so placed and protected that this cause of hematuria does not often obtain; such injuries, according to Kuster, constituting less than 3 per cent of all surgical diseases. They are always serious injuries, and whenever hematuria follows an accident of the nature I have described, cystoscopic examination, if the source is not self-evident, should be immediately made, and the kidney at fault cut down upon and mended if possible, or removed; for if there is enough injury to cause the appearance of blood in the urine, the capsule of the kidney will also be found torn, and blood and urine will escape into the surrounding cellular tissues. Delay in such cases means long invalidism and often death.

8/10/06. Jno. M., 40 years of age, shopkeeper. Injured in a trolley wreck after which he was unconscious for two days. Bloody urine drawn by catheter soon after the accident. When he recovered consciousness he arose and walked to the toilet after which he passed a large quantity of liquid blood. 10/30, all hemorrhage had ceased, but the urine contained pus. He came under my care 11/14 with recurrent hemorrhage, chill and high temperature; thoroughly septic. I made a lumbar incision and at the bottom of a perinephic effusion of clotted blood, pus, and urine, found the kidney which was torn transversely from before backwards, a little

above the middle of the organ. The separation was almost complete, the poles were united only by the tissues of the hilum and a thin piece of the cortex. The lower fragment was split longitudinally and posteriorly, almost two-thirds of its length; and there were also several star-shaped fractures. There was no chance for a successful plastic operation, so the kidney was removed. Recovery.

An artery of considerable size may be torn, and the hemorrhage, alarming at first, may become stilled. In intervals of apparent progress to recovery, after some exertion, the thrombus may be displaced and there may be repeated hemorrhages which result in extreme debility, anemia and infection.

17. 10/20/02. J. M., farmer. Patient of Dr. Dilworth and Dr. Beckett; 38 years old; was thrown from his buggy in a runaway accident and struck his right loin against a heavy piece of wood. A few minutes afterward he was found greatly shocked, pale, collapsed and suffering exceedingly from pain in the abdomen. Two hours afterward he passed 1800 cc of bloody urine. The shock was prolonged and any exploratory operation was deferred. At the end of a week he had a second bleeding, so profuse that unconsciousness followed. A ureteral clot was again formed and so at intervals of five to seven days he had recurrent hemorrhages until December 21st, when I saw him in consultation with Drs. Dilworth and Beckett. The urine contained blood and pus and there was a marked tumor in his side. The kidney was cut down upon and found lying at the bottom of a perinephric cavity containing blood clots, pus and urine. It was torn irregularly across its body a little above the center, and standing up in the ragged tissue was a large arterial branch that had been torn squarely across by the force of the crushing blow. The reason for the relapsing hemorrhages was plain. At intervals the clot in this vessel would become dislodged by some muscular exertion following the accumulation of a little strength. Even as we examined it the clot was forced out and it commenced to spurt. We ligated it, freshened the torn edges of the kidney and brought them together with a few cat-gut stitches, thinking we might save the kidney. The wound was drained but infection was too great and on January 19th Dr. Beckett removed the kidney. Recovery complete and uneventful.

Hemorrhage from the kidney may be painful or painless. Renal calculus is commonly painful, but not necessarily so. Uratic stones are sometimes so smooth that they may be in the kidney a lifetime and give rise to neither pain nor bloody urine, unless ascending infection from the bladder, or tuberculosis, attacks the kidney, or the stone, being small, engages in the infundibulum of the ureter, produces congestive contractions, and ruptures some small bloodvessel. But stone in the kidney is often accompanied by atrocious pain; and if rough or branched, blood may be found by microscopic search at all times; while after muscular exertion, profuse hemorrhage takes place; this is more particularly the case in the presence of oxalate stones, the crystals of which, set at irregular angles, are as sharp as glass.

To establish a diagnosis, resort should always be had to a skiagraph of the kidney and ureter upon the side painfully disturbed. But even when once obtained full reliance may not be placed upon the shadow, for sometimes this agent is tricky, showing stones where none exist. The following case illustrates the point well, while also it may be used to illustrate the hemorrhage of malignant tumors of the kidney.

18. 12/7/07. M. J. S., 49 years of age; miner; patient of Dr. Baylis. Two years ago after lifting a heavy weight a free and painless hematuria appeared. This disappeared after a period of rest. At various times since the hemorrhage has been repeated. Painless at the outset, after a few hours it is always followed by an intense right-sided renal colic, which lasts from three to ten days. During the past six months the intervals have lessened and the amount of blood lost has been greater. No pain in the bladder and no increased frequency of urination. An inspection of the interior of the bladder shows it to be a healthy viscus and both ureteral openings to be of normal size and appearance. Urine obtained from the right ureter contains some blood and pus but no other cells, casts, or organisms. A suggestion of exploration of the right kidney was declined. January 9th hemorrhage repeated. From the character of each hemorrhage at its onset I told him I believed his trouble to be a papilloma, probably non-malignant, projecting into the pelvic of the kidney, the pain being caused by the subsequent pressure of the clotted blood. We had a skiagraph taken, which is presented herewith, and from it the diagnosis of stone was made. The picture shows four shadows, two in the kidney and two in the ureter. January 16th, nephrectomy through an Abbe incision; exploration of the ureter being deemed necessary. As soon as I seized the kidney I found I was dealing with a malignant growth and removed it entire. There was no stone in the kidney substance and none in the ureter. What caused the shadows? I do not know. The tumor is a misplaced adrenal which had grown through the lower pole of the kidney, from the outer side, penetrating the pelvis, and there forming a soft polyp, practically a papilloma, which was the source of the blood in the urine. Recovery was prompt and perfect. This brings me to a case of malignant renal growth which was believed to be pyelitis occasioned by calculus.

19. 2/10/07. E. E. N., 36 years old; bank cashier. Patient of Dr. Hamman. For three years he has had dull pain in the left loin which at intervals became colicky, and was accompanied by blood in the urine. He has never sought medical aid but once, and then he was told that his trouble was kidney stone. For several weeks he has been unable to work, has had temperature, chills, blood in the urine in small quantities, and during the past few days some pus. The whole of the left side of the abdomen, and about one-third of the right side, is occupied by a tumor which makes these tissues and those in the loin bulge like a drum head; the superficial veins over its whole surface are enlarged from the interference with the circulation by its pressure; its bulk, interfering with the play of the diaphragm, has increased the respiratory rhythm to 30 per minute; he suffers from colic, by the interference of the tumor with free exit of gas from the intestines, and has not had a passage from the bowels for a week despite the administration of severe cathartics. He is emaciated from inability to take food. The tumor examined bimanually seems to fluctuate. He was believed to have a great abscess of the kidney from the ureter being obstructed by a stone, or a malignant growth, perhaps both, with the preponderant history in favor of stone. The kidney was cut into by a free straight incision in the back. It was adherent to the muscle plane. When the capsule was cut through and a pair of forceps preceding the exploring finger was pushed deep into the kidney substance the blood spurted forth like water from an artesian well. I thrust my finger down into the pelvis of the kidney seeking the stone and the pus, but there was none there. The tissue

was as friable as rotten sponge and broke into masses in all directions. It was sarcomatous. I packed the wound and left everything open the better to relieve tension. After the operation the breathing became of normal frequency, gas was passed, the bowels moved in a few hours and all pain ceased. When the great tension was relieved it was noticed that the lymphatics in the skin of the abdomen and in the groin on the left side were enlarged. He was given Coleys fluid for about four months. The tumor and the swollen glands disappeared and the following September his physician reported him to me as well and working at his desk in the bank.

Case reports are made from time to time of persistent one-sided hematuria in which, after the splitting of the kidney in situ, or its removal, no definite pathological change in its tissue can be noted. I have recorded an instance of such indefinite trophic change elsewhere, and have referred to the same case earlier in this article.

Fenwick has called attention to another strange change in a limited portion of the kidney structure, which, easily overlooked by the uninstructed, provokes serious hemorrhage, and is readily cured without removal of the kidney. I refer to angiomatous changes in one of the papillæ.

19. 1/29/07. O. A. C., 45 years old; printer; patient of Dr. Hamman. Two weeks since he was attacked with a symptomless hematuria, which has been continuous and extremely severe. Cystoscopic examination shows a healthy bladder, and the emission of blood from the left ureter. January 21st. examination of the kidney and ureter through an S shaped incision in the loin. As no clots could be seen coming down the ureter when it was rolled up on the peritoneum, it was opened and explored toward the bladder, while a small silk catheter was passed up to the pelvis of the kidney. No obstruction was felt in the pelvic part of the ureter and the water used to flush the tube was not stained with blood as it issued from a catheter in the bladder. A very few drops of blood came from the catheter in the kidney. The kidney was brought out upon the side, split open from pole to pole and the entire pelvis and each calyx with its pyramids examined closely. Everything was normal except a portion of one papilla in the upper pole, this was dark purple in color and bled continuously. It was removed by a wedge shaped incision, the sides were united by one stitch of fine cat-gut. The incision in the ureter was closed over a catheter which was withdrawn through the pelvis of the kidney. The mucous membrane of the pelvis was approximated by a few fine interrupted cat-gut sutures, and the two sides of the kidney brought together with a double row of mattress sutures tied loosely, and the wound drained by two ample cigarette drains, which were withdrawn in two and four days respectively. Recovery, uneventful and complete. No hematuria since.

Tuberculosis of the kidney is frequently the cause of hematuria of varying grades, depending upon the amount of tissue involved, the stage of the disease, whether miliary or caseating, and in the latter case upon the progress and situation of the ulcerating surface. In the hemorrhage which occasionally accompanies a thickly sown eruption of miliary tubercles in the cortex, the hemorrhage of congestion, pus has preceded its advent for some time, and the pain is only a dull ache in the back. Where a caseating nodule or gumma breaks down and erodes a fair-sized blood vessel, the hemorrhage is frequently great and prolonged, but is rarely or never painless, for the clots and sloughs obstructing the ureter give rise very quickly to attacks of kidney colic. But in cases of long standing though symptomless tuberculosis of the kidney with palpable tumor, we see, rarely enough, a painless and abundant hematuria which arises from a fine granulomatous growth, gelatinous, really polypoid, which fills the pelvis of the diseased organ like moss.

20. 3/7/03. F. N., merchant, 36 years old; patient of Dr. Moseley. He is of good antecedents and without any history of tuberculosis. In the summer of 1899 his horse fell upon him, and the horn of the saddle struck him over the left kidney. Immediately afterward he passed blood with the urine and has done so at intervals ever since. Often the urine would be clear for a few days and then a free hemorrhage would take place, this would gradually subside, there would be another interval without blood, and then the hematuria again. He has become very anemic, and lost thirty pounds in weight and is feeble. On February 28th of this year there was an alarming hemorrhage accompanied by much pain and a rise of temperature, and a tumor could be felt in the left loin. Cystoscopic examination shows a healthy bladder. Blood stained urine issues from the left ureter. Urine acid, contains some pus, and blood; but no tubercle bacilli. March 13/03. nephrectomy. The kidney was very large and adherent. It was tuberculous and filled with large caseating masses; its pelvis which was greatly enlarged, was filled with a large gelatinous mass of small polypoid growths from which the hemorrhages came.

The history is clear: injury, bruising of the cortex, a tear in the mucous membrane of the pelvis, formation of granulation tissue, polypoid growths, which, easily lacerated, bled easily and frequently; deposit of tubercle bacilli in the injured kidney tissue; formation of tuberculosis foci, caseation, chronic inflammation and adhesions. He was entirely well for two months and has remained well ever since.

Multiple cystic kidney is looked upon as such a hopeless disease that the advice is given always to let it alone, and as I can find no record of hematuria being one of its salient symptoms I report the following case.

21. 9/12/07. J. B., farmer, 63 years old; patient of Dr. Bacon. Has kidney cachexia. He has been very ill for a month and running temperature from 100° f. to 104° f; has attacks of pyuria and hermaturia. Both kidneys are enlarged, the left occupies all of that side of the body, and a little more, and is very tender and tense. The right kidney is enlarged and not tender; breathing and bowel movements interfered with by pressure. Twenty years ago, four years ago, and one year since he had similar attacks, in which there was blood in the urine. Cystoscopic examination with catheterization of both ureters. Bladder healthy, both ureteral openings enlarged but neither ulcerated. Urine from right kidney acid, specific gravity 1020, a few pus corpuscles, and a very few red blood cells present. The left kidney secreted nothing. I made a diagnosis of probable bilateral malignant disease.

October 13th, through a long anterior incision the kidney was exposed and found to be a multilocular cyst. All of the cysts that could be reached through the incision were opened and the division walls removed with scissors. Most of them contained clear, some bloody, and some purulent fluid. The pelvis of the organ was greatly dilated and was full of

very thin pus. There was but little bleeding. The pressure was greatly relieved, and pain, temperature, and asthmatic symptoms, ceased immediately. The swelling of the right kidney disappeared and after great trouble, for he was very feeble, the wound healed, without suppuration. He made a good recovery and is apparently well, at least well enough to get some pleasures out of living and to transact business.

In dislocated or movable kidney abundant hemorrhage occurs, from time to time, and is usually painless, and probably induced by pressure congestion, from obstructed circulation.

22. 2/19/08. Mrs. D. H. W., 39 years old; patient of Dr. Sheppard. Has had painless hematuria for two weeks without great urinary frequency. She has pain in the back which is worse in the left side. There are no other subjective symptoms. Both kidneys are enlarged and both displaced; the right is a true floating kidney. Cystoscopic examination:—urethra and bladder healthy, blood to be seen issuing in steady regular jets from the right ureter. Operation deferred.

Echinococcus is said by some to be a cause of renal hemorrhage. I have never met a case, but one would think that in the microscopic examination of the urine the hooks would be surely found at one time or another. Nephritis, too, either acute or chronic, frequently is the cause of hematuria. But in chronic nephritis, even if it be one-sided, there is the albumen, which is present after the precipitation and removal of the blood; there are the casts in the intervals of the hemorrhages; and also the cardiac and stomachic symptoms to aid in diagnosis. Still there are some cases of chronic Bright's, in which one-sided, persistent and depleting hemorrhages have been reported which must be very puzzling. It is to be recollected, however, that surgical interference, at least so far as the relief of tension by splitting the capsule, can do nothing but good. I have thus endeavored to present to you the subject of hematuria, illustrated by cases which have been interesting to me, and which have helped teach me the complications of a subject simple in itself but very diversified as to its anatomical origin and histological causes.

In the treatment of this symptom, usually surgical measures are to be employed. But even so, to gain time, the use of epinephrin, ergot and hammamelis, morphia when needed, a bland diet, and above all, rest, are not to be overlooked. Absolute forbiddance of all alcoholic stimulants is necessary.

Discussion.

Dr. H. C. Moffitt, San Francisco: Dr. MacGowan has covered the subject so fully that there remains very little for me to discuss. In my work it is natural for me to come across renal hematurias resulting from tuberculosis, stone or new growth. I would emphasize that with regard to the new growth the Grawitz tumor seems very common in California, the next commonest place to its occurrence in Vienna. A very long silent period may come after the initial hemorrhage in the new growth. I remember a young man whom I saw some years ago who had had his first hemorrhage four years before any serious symptom attracted attention to the kidney. It is well to remember that hemorrhage of hypernephroma may be profuse. I remember a case in which the later hemorrhage was so profuse as to lead to a diagnosis of aneurism of the renal artery. These hemorrhages, although profuse, may stop absolutely. I have in mind a case of Grawitz tumor with hemorrhages recurring frequently, particularly after exhaustion or indulgence in an undue amount of beer. Between these hemorrhages the urine was free from any macroscopic blood. Some weeks ago a man came into the hospital with a history of spitting blood. He had a tubercular reaction and deformity of the spine and an unusually lumpy tumor in the abdomen. The whole condition was regarded as tuberculous until the history of hematuria called more attention to the kidney. The diagnosis of Grawitz tumor was confirmed by autopsy. It has not always seemed easy to me to tell the hemorrhage that comes in certain cases of nephritis, particularly in old men, from a complication with renal stone. Of course the history helps out in our judgment. A continued examination of the urine will help us in our diagnosis, as there are cases of nephritis in which hemorrhage is a recurrent symptom. These cases have been emphasized by Askanazy. It is not always easy at the bedside to trace the source of a few red blood cells which appear in the urine. It seems well to remember that any acute abdominal pain may give rise to no symptoms except a severe intermittent pain in the lumbar region. Almost constantly there were red blood cells present. I have in mind another case of a child in which there was a large irregular tumor of the left lumbar region which seemed definitely to be a kidney tumor. Even without the severe attacks of pain the red blood cells were found frequently in this urine. A diagnosis of renal sarcoma was made until the increasing irregularity of the tumor and occurrence of symptoms elsewhere led to a readjustment of the opinion and a diagnosis was made of tuberculous glands in the abdomen. I have in mind a large tumor of the right lumbar region in which a diagnosis seemed perfectly plain of a large renal tumor. The ordinary methods of diagnosis were applied and seemed to prove. There were constantly red blood cells in the urine, but abdominal section showed no tumor of the kidney but a retroperitoneal tumor. Not only are we going to make the diagnosis with the help of catherization of each kidney and the cystoscope and the X-ray, but we must bear in mind the general aspect of the case. Unless we take a whole clinical picture we are going to be led astray by the hematuria, as we are by other symptoms which seem to be perfectly definite.

Dr. W. W. Beckett, Los Angeles: I have not much to say on this very important subject, but I want to thank Dr. MacGowan for his exhaustive paper. This is a branch of medicine somewhat out of my line, but the diagnosis, as in other cases along the urinary tract, is so important that unless it is a very simple case I usually send them to Dr. MacGowan. Those cases where there is a prolapse of the bladder are very frequently benefited and cured by anterior colporrhaphy. Another condition which I think the doctor did not mention is that of slight hemorrhage coming from caruncles within the uretha. Hemorrhage coming from the kidney, as Dr. MacGowan mentioned in the trauma case, was exceedingly interesting. That case went along about two months before removing the kidney, and several times the patient was aparently well and there was no blood in the urine whatever. At the first operation the kidney seemed to be in good condition. At the second operation the vessels leading up into the kidney were entirely occluded, and while the kidney had not sloughed the circulation was entirely cut off from the renal substance.

Dr. W. F. B. Wakefield, San Francisco: My experience with hematuria has been somewhat limited. There are two things which have impressed me in

the study of ten or twelve cases, and those were the relative frequency of a tuberculosis of the kidney and the relative frequency of the condition of which Dr. Moffitt spoke—the Grawitz tumor. It seems to me that tuberculosis of the kidney is much more frequent that usually supposed and that the symptoms are misleading on account of its being somewhat difficult to demonstrate the tubercle bacilli in the urine. I am quite impressed with the opinion that tuberculosis of the kidney is a relatively frequent condition and much more frequent that we generally deem it to be. Oftentimes rather slight symptoms will point to a tuberculosis of the kidney where the bleeding is relatively very limited. On the other hand sometimes we will have enormous hemorrhages from a kidney with practically no symptoms at all. Very recently a case passed into my hands which surprised me by the amount of blood that was lost, with absolutely no other symptoms. The urine, however, was loaded with tubercle bacilli. Why hypernephroma should be rather frequent in California I do not know, but there are few of us who have had experience with abdominal surgery who have not met one or two of these cases. Yet one would judge that the Grawitz was a comparatively rare condition. In San Francisco so many have come before my notice that it does seem as Dr. Moffitt has suggested that here it is a relatively frequent condition.

Dr. MacLaughlin, Pasadena: I have had some experience the last year which has led me to recognize the difficulty offered in interpreting the meaning of hematuria which should be regarded as a symptom. I think in every case of hematuria it is very important and we must regard it purely as a symptom and that the clearing up of the diagnosis sometimes requires a great deal of work. I am sorry to say that very little of this work has been done by the average general practitioner. Recently I had a case of a woman with hematuria who had been advised by four doctors to have the kidney removed. On cystoscopic examination the bladder was found to be normal and upon catheterization normal urine was found to be coming from the side supposed to have tuberculous kidney, and bloody urine and pus coming from the opposite side. This proved to be a stone on the side opposite to that where the tumor was supposed to be. I could report two more cases in which the operation was finally done on the side opposite to that supposed to have the trouble. Another point in these cases is the importance of rest. I had a man from a mining camp who had been injured with a large chunk of coal on the left side, with an immediately following hematuria. This persisted for three months in spite of all treatment. He passed large quantities of blood, in fact so much that he was anemic. There were no other symptoms and no pain. I did nothing for him except to order rest in bed, and in three weeks his hematuria had completely disappeared. Another class of cases are those of stone. Frequently we hear of a kidney lesion simulating a stone with hematuria. I do not hear so much about it now. That is simply because the great majority of these cases can be cleared up by frequent microscopic examination and X-ray pictures. Ninety-nine out of every one hundred cases where we get hemorrhages simulating stone in the kidney, it is actually stone. I had three cases recently in the hospital, all of whom had blood in the urine and all were supposed to have stone in the kidney, but all cleared up in a very short time. However, in every one I succeeded in finding a small calculus which was passed while the patient was under my observation. A great many of these cases are due to a sudden passing of a stone while the patient is under observation. Careful observation should be made of the urine in every case of hematuria.

PENTOSES. *

By MR. A. HALDEN JONES, Los Angeles.

Pentoses occur in nature in many fruits, e. g., cherries, plums, huckleberries; in vegetable gums, as gum arabic or gum acacia, in cherry gum, also beet gum from our sugar beet. Here they exist as pentasones which are polysaccharides, for the five carbon sugars as starch is for the six carbon sugars. Pentoses occur in marine plants; they have been found in several varieties of seaweed. The lignin test, which is used by botanists to demonstrate the site of wood-formation in the growing plant depends upon the presence of wood sugar which is a pentose. Pentoses also occur in the nucleic acids of many plants—in fact, the yeast plant furnishes a convenient source of nucleic acid.

In the animal body many nucleic acids containing pentose radicals lie in close relation to the process of life. You will remember that the nuclein of the physiological chemist is the same as the chromatin of the histologist. Such nucleic acids have been demonstrated in the pancreas, liver, spleen, thyroid and brain; also, in the head of the spermatozon.

From the standpoint of pathology, pentoses sometimes are of considerable importance. Some sarcomata possess a high pentose content. And again, we find cases of chronic pentosuria. This condition persists on a pentose free diet. Pentosuria is not of grave clinical significance, yet if it is mistaken for diabetes mellitus it may be the cause of much needless worry and trouble to the patient. And, moreover, the diabetic diet does not influence the amount of pentose excreted. The observation has been made repeatedly (Sahli) that such cases are injured by the strict dietary of the more grave disease. In such cases, as those just cited, chronic pentosuria and malignant tumors, the five carbon sugars must be a product of metabolism. Whether this is a product of perverted metabolic or enzymic activity, or whether it is an exaggeration of the process which provides normally the pentose for nucleic acid, is a matter of conjecture.

When fruits containing pentose are ingested a temporary pentosuria, and so-called alimentary pentosuria, readily is obtained. The amount of pentose excreted bears a direct relation, of course, to the amount ingested. Not all of it is excreted. When ingested pure, these sugars pass the easist of all into the urine. And in the case of xylose, may be demonstrated after the ingestion of only 0.05 grm. (Emerson.)

Several questions arise concerning the role of pentoses in plant and animal physiology. Some of these questions may be mentioned here: First, why does the plant store pentoses in the fruit? Is it for the growing embryo? Why does the plant use pentose in preparing lignin, its so-called skeleton—even in the maple tree, which certainly has plenty of other sugars available? In the case of the

* Read at the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

animal organism on a pentose free diet, what is the source of the nucleic acid pentose, etc. Also, can the animal organism use pentoses for glycogen formation the same as it does other carbon sugars? And, is the old rule true, which states that only sugars containing three atoms of carbon or some multiple of three can function in glycogen formation? This is the question we are considering today.

To test this point, pure arabinose was prepared from gum arabic. The experimental animals used were chickens, twenty-four hours old. The glycogen estimation was done according to the method of Dr. Pflugger. After inversion of the glycogen, the resulting dextrose was calculated quantitatively by the use of the cyanide process, as modified by Dr. Stookey.

In the first set of chickens, fifteen twenty-four-hour old chicks were used. Four were used as controls. These proved to be glycogen-free, this agreeing with the observations of Pflugger.

The others were fed the pure pentose in amounts varying from one to three grammes. Six were killed six hours after feeding; three were fed several times and killed twenty-four hours after the first feeding. Two died soon after being fed. In none was there any evidence of glycogen formation. One of the forty-eight-hour chickens gave a slight reduction of copper, but from this no conclusion could be drawn, all the others being negative.

These results were unsatisfactory in some respects. Of course, the hepatic cells of the chickens were not used to forming glycogen, and it was thought possible that a different result might follow if the pentoses were furnished to hepatic cells in the habit of forming glycogen. Some of the chickens had a diarrhea soon after feeding; the quantities worked with were very small, the heaviest liver weighing 1500 mg.

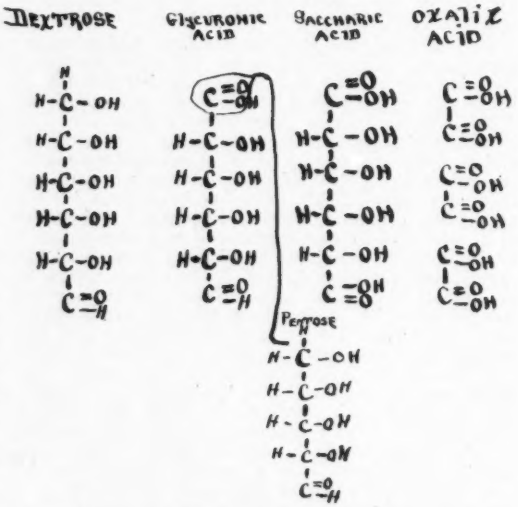
In another series half-grown chickens were used. These were rendered practically glycogen free by starving in a refrigerator. They were then fed pure pentose in quantities of six to eight grammes. The livers of these gave no more reduction of copper than the livers of controls killed before the injection of pentose.

Concerning the origin of pentose in the animal organism on a pentose-free diet, the following suggestion is offered as an explanation:

The chart gives what are undoubtedly some of the intermediary products in the oxidation of dextrose to carbon dioxide and water. You will notice that the first oxidation gives glycuronic acid. Now, if from glycuronic acid CO_2 be removed, pentose results, as you may see. Such a removal of CO_2 from the molecule is paralleled by the process which gives rise to the two ptomaines, cadaverin and putrescin, from lysin and ornithin. This occurs outside of the body in substances like fish ova and sperm, which contain large amounts of the hexon bases (lysin and ornithin). This explains the cases of ptomaine poisoning after eating fish which have been canned without the removal of the sperm ova. This takes place in the body in the rare condition known as diaminuria, cadaverin and putrescin occurring in the urine.

The results obtained in this series of experimental animals are not considered final. The study will be continued, using a larger number of animals and the conditions varied to meet the indications as now seen.

You may ask, "Is there any comparison between the amount of work involved on the part of the hepatic cells in converting a five-carbon sugar into glycogen and that involved in converting the substances which are known to be precursors of glycogen." Some of these precursors are the monosaccharides, dextrose, levulose and galactose; the disaccharides, maltose, lactose and saccharose; the polysaccharides, starch, dextrin, etc. The latter can function as glycogen formers only after being hydrolyzed to monosaccharides in the alimentary canal. Glycerin is a three-carbon compound. According to the work of Cremer this can function and a sugar and glycogen form. And only through glycerin can



fat influence, directly, glycogen formation. Concerning the ability of proteid to affect glycogen formation, opinions vary. Most investigators agree that those proteids giving the alpha naphthol test, i. e., those containing a carbohydrate radical may directly influence glycogen formation. Yet feeding glucosamin the carbohydrate radical has given slight or no results. And on the other hand, Dr. Stookey feeding pure casein obtained positive results. Many other cleavage products of proteid have been fed. The results have been positive and negative with no definite rule. Einden with alanin obtained positive results. In feeding some of the cleavage products a factor of error is confronted on account of the gastro-intestinal irritation and consequent interference with absorption. This was marked with arabinose.

In conclusion, we may say that the hepatic cells which are able to swing the six carbon levorotatory ketose, laevulose to the dextrorotatory glycogen which on cleavage yields only aldose, that these cells seem to be unable to use the five carbon chain to form reserve carbohydrate.

POSTOPERATIVE TREATMENT.*

By O. D. HAMLIN, M. D., Oakland.

In considering postoperative treatment, we must necessarily consider the proper preparation of patients for surgical operation, as it has a very important bearing on the postoperative condition. The rationale of preparatory treatment is based upon the principle that the entire system, and particularly the eliminating system, should be as nearly normal as possible. Robert T. Morris very strongly states that all the avenues of elimination should be open and active, in order to overcome conditions that lead to autointoxication and render infection more probable. I do not here intend to take up your time with the minor details of preparatory treatment, but will mention some of the important points that should be considered in order to make the postoperative condition most favorable.

Since many of our major operations are not performed in emergency cases, the patient should receive the preoperative attention that will tend to prevent postoperative complications. The kidneys and gastrointestinal tract should receive the proper attention. The gastrointestinal tract should be thoroughly cleansed for some days before operation for if the patient is given a physic only the day before, as is often done, the bowels will retain more or less fermentative material. The patient should drink large quantities of water, several quarts a day, if possible. This procedure washes out the stomach and intestines, flushes the kidneys, fills the tissues full of water, helps to prevent suppression of urine, alleviates thirst, and helps elimination through the skin. In other words, it opens the three principal avenues of elimination.

In the last two years, as will be readily seen by the literature, surgeons have given more attention to postoperative treatment than ever before. Many operations have their particular postoperative treatment, which I will not consider, but there are general considerations which apply in common to a good many postoperative conditions.

The surgeon's responsibility does not end with laying down the scalpel but continues until convalescence has taken place. Many operative procedures would be rendered useless by failure to carry out the proper after-treatment. It would be of slight avail to cut a urethral stricture if the subsequent passage of the sounds were not rigidly enforced, nor would a good result be obtained following resections of bones and joints if no attention were paid to the position of the parts.

The purpose of after-treatment is to prevent complications, but failing in this, to recognize them early, be they simple or grave, and so intelligently to treat them as to give the patient not only the best chance for recovery but the best final functional result. Not only must the wound or injury itself be treated but the entire organism must be brought to as nearly a normal condition as possible. Each case must be studied individually as regards the previous habits of life and complicating disease. The mental status of the patient must be understood and the general physical condition must receive attention.

Postoperative Posture of the Patient.—Much has been said upon the important subject of the position of the patient, immediately following operations. Rest, bodily and mental, is the first consideration. It seems to be a custom or fancy, among American surgeons especially, that after all operations of severity, the patient must be placed in the dorsal or recumbent position, in which uncomfortable posture he is forced to remain, not being allowed to turn on either side for several hours or days. Allingham of England and Fowler of New York appear to be the first to abolish this ancient custom, to which there are many rational objections.

The proper position, I think, is the right side, when the patient is taken from the operating room or begins to recover from the anesthetic. The heart's action is not interfered with; the tongue drops to one side of the mouth and does not drop back into the throat; if the patient vomits, he can vomit more comfortably; regurgitation of the mucus into the trachea is not so likely to occur; the mucus in the stomach, which has probably been swallowed during the anesthetic or shortly after, and contains ether, more readily passes through the pylorus to the duodenum; and the patient is able to draw up his limbs and relieve the tension on the abdominal muscles. Later, he may be allowed to take any posture that is comfortable. This rule, of course, does not apply to patients that require a particular posture for drainage purposes.

Anesthetic Vomiting.—This is one of the first symptoms that we encounter in postoperative treatment. In the ordinary case it does not amount to much, but sometimes is persistent and prolonged for several days. When not traceable to other causes, uncontrollable vomiting must be attributed to nervous disturbance. The character of the vomit does not differ from that of typical anesthetic vomiting. These patients continue to vomit in spite of ordinary treatment. In such cases, systematic lavage of the stomach must be practiced and repeated at intervals of four to eight hours, until vomiting ceases. Instead of using the tube, the patient may be given large draughts of water containing some alkali, as bi-carbonate of soda. Following the lavage of the stomach 1-12 gr. cocaine hydrochlorate, 5 gr. bismuth sub-nitrite and ½ gr. cerium oxylate may be given dry on the tongue. Spraying the nose and throat with 4% solution of cocaine will be found useful in some cases. Frequently rinsing of the mouth with cold water will add to the patient's comfort. I do not advocate the use of morphine, although it is recommended by others. It may decrease vomiting temporarily, but tends itself to cause persistent nausea and vomiting.

In neurotic individuals, the use of counter-irritation over the epigastrium by means of a mustard plaster or even the thermo cautery may be useful.

I have seen one patient, who vomited for ten days after an ovariotomy and to whom no treatment was of avail. The vomiting finally stopped sponta-

* Read at the Thirty-eighth Annual Meeting of the State Society, Coronado, April, 1908.

neously. Nutrition, in this case, was maintained by nutritive enema. All medication by the mouth should be withdrawn while the attacks of vomiting continue.

Pain.—Morphine should not be given if its use can possibly be avoided, especially in laparotomy cases. Here, even small doses of morphine stop the peristaltic action of the bowels and cause distention. In neurotic cases, hypodermic injections of sterile water will often suffice. The pain usually stops in twenty-four hours, but in patients who are restless and neurasthenic it often continues longer.

Postoperative Shock.—Postoperative shock and hemorrhage are termed by some surgeons collapse. Pure collapse and pure shock may possibly be distinguished in laboratory experiments, but clinically the two are usually so closely combined as to render distinction impossible. So far as the treatment is concerned, they are identical. Some surgeons term collapse an inhibition of the vaso-motor center in contrast to shock, which is exhaustion of the center. The etiology of surgical shock has never been fully determined or satisfactorily explained.

The condition is defined by Gould as "a relaxation or abolition of the sustaining and controlling influences which the nervous system exercises over the vital organic functions of the body, the result of a profound impression made upon the cerebrospinal axis, either directly through the agency of an afferent nerve or through the circulatory system."

According to Warren, postoperative shock is a peculiar state of reflex depression of the vital functions, especially of the circulatory system, due to nervous exhaustion resulting from irritation of the peripheral ends of the sensory and sympathetic nerves followed by marked lowering of the vital powers and relaxation of the vaso-constrictors.

The degree of shock is dependent upon the severity of the irritation as well as the length of time which this continues in existence. In the treatment of shock it is well to remember that the symptoms of shock, which appear during or immediately following an operation, are often so closely interwoven with those induced by toxic quantities of the anesthetic or those dependent upon asphyxia that they may easily be attributed to other causes, or conversely, the toxic phenomena may be erroneously referred to surgical shock.

In determining the character of the shock, the condition of the system prior to the operation or the time required to complete the operation should be taken into consideration. If the pathology of shock is due, as has been stated by some authors, to vaso-motor disturbance and relaxation of the vaso-constrictors, I think the use of adrenalin chloride the best treatment for this condition, and have noted marked change in the character of the pulse after the administration of 30 min. of adrenalin chloride. I think, at this stage, the use of large doses of strychnia, digitalen, normal salt solution, and especially nitro-glycerine, which has become a matter of habit, and is mentioned only to be condemned, is in direct contrast to the pathology.

The recent experiments of Crile and the conclusions which he has drawn have awakened general interest. Crile believes that the essential features of surgical shock are the exhaustion or paralysis of vaso-motor centers which control the tone of the peripheral circulation. To the surgeon of to-day the essential fact brought out by Crile's experiments is that strychnia in very large doses, as it is now often given as a stimulant in the treatment of shock, is practically of no value, and in pronounced cases may even increase the condition it is intended to relieve.

The action of the heart is decidedly weakened during shock, and large doses of stimulant causes it to contract with great force for a few beats and finally stop in dilatation. On the other hand, if the heart can be kept going with small doses of stimulant until the vaso-motor system regains its equilibrium, no damage is done; but I think that many patients are over-stimulated during shock.

As a prevention of shock, all operations should be performed as rapidly as is consistent with good surgery, and all unnecessary exposure and manipulation of parts especially connected with the sympathetic nervous system should be avoided. This is especially true in brain surgery, and in cases of trephining after injury, where a considerable degree of shock already exists, the use of the mallet and chisel only increases this condition. In cases of collapse from hemorrhage or shock, and during the course of severe abdominal operations, there is little doubt that information concerning arterial pressure will be of value to the surgeon. Many forms of apparatus have been devised to serve this purpose. The Riva-Rocci instrument, which has been in use since 1896 in Italy and has been introduced in this country since 1900, appears to have as many advantages as any other instrument brought to our attention. It is probably sufficient for all clinical purposes. It may be that Cushing takes an enthusiastic view of the matter in his predictions that in appropriate cases the routine observations upon blood pressure will soon come to occupy the same relative position that pulse and temperature occupy at present.

When the condition of the patient or character of the pulse is such as to predispose to shock or sudden or unexpected loss of blood, providing the source of the hemorrhage has been stopped, or if from any other cause we recognize symptoms which indicate impending shock, preventive measures should be adopted at once, such as the use of adrenalin or alcohol. I believe, in such cases, the use of alcohol or adrenalin previous to the operation is a very important preventive measure, and alcohol especially if the condition is likely to be psychical. As regards adrenalin, it may be stated that this drug is contra-indicated by possibly interfering with the renal secretion, but given with alcohol, I think this is partly overcome.

Postoperative shock has been divided into four different classes: first, surgical shock due to vaso-motor depression, nervous exhaustion or vital depres-

sion without hemorrhage, second, shock as the result of hemorrhage, third, postoperative shock from the toxic effects of the anesthetic, fourth, shock produced by mental disturbance—sometimes called nervous collapse.

The diagnosis of the particular form of shock is a very important factor in the treatment of shock. For instance, in shock due to vaso-motor depression or nervous exhaustion without hemorrhage, the patient immediately, or within an hour or two following the operation, passes into a condition of more or less profound prostration, and the absence of hemorrhage and the exclusion of the anesthetic narcosis will be obvious reasons for diagnosing this form of shock. In the treatment of this form of shock, according to the experiments of Crile, the best results have been obtained by the use of morphine, alcohol and adrenalin, administered hypodermatically, and alcohol by rectum or other nutritive enema. In postoperative treatment, it is very important to wash out the rectum, first removing all mucus coating thereof, that prevents the absorption of the enema. Another important point is that the enema should not be of large quantity, not more than four to six ounces of liquid, as large quantities, under these conditions, are often not well retained on account of the relaxed condition of the sphincters; but no trouble is encountered with the retention of small quantities of liquid. Strychnia can be used in cases where there is embarrassment of respiration.

Dr. N. C. Morse, of Iowa, who has given the question of postoperative treatment a great deal of consideration, objects to the Trendelenburg position in this form of shock, and especially so if the patient is plethoric, as it causes congestion of the already congested vessels of the head and tends to aggravate the condition. Capillary congestion may be relieved by vigorous rubbing, and cloths wrung out of hot mustard water may be applied to the pectoral region.

Shock as the Result of Hemorrhage.—This is the most fatal form of postoperative shock. It is this class of cases that taxes severely the resources of the attending surgeon. The diagnosis of this form of shock is not difficult except when the hemorrhage is concealed.

To rely upon strychnia or other heart stimulants in this form of shock is fatal. The recognition of hemorrhage or the loss of blood and the checking of the hemorrhage is the first and most important thing. While this is being done, the patient's head should be lowered for two purposes: to keep the brain active by nourishing it with what little blood there is in the body, and possibly elevating the point of hemorrhage to make the blood pressure less at that particular point. If the patient is in a very bad condition, do not simply elevate the bed a few inches, but stand the patient almost on his head, if necessary, until the hemorrhage can be checked. After the bleeding is stopped, use saline solution (subcutaneously and rectal), alcohol, and possibly strychnia. Elevate the limbs at right angles to the body and, if necessary, bandage them tightly to force what little blood there is left to the brain. Also, compression of the abdominal aorta in many cases may serve as an important aid while the hemorrhage is being checked.

Difference Between Shock and Hemorrhage:

Symptoms in	Shock	Concealed hemorrhage.
general	Often regressive	Always progressive!
local symptoms	Absent	Often present, e. g. cough; localized pain or tenderness; abdominal distention; vomiting; hematemesis; hematuria; etc.
Mentality	Dull; stuporous	Active
Restlessness	Slight.	Often great
Pallor	Moderate	Very marked—especially of mucous membranes; progressive
Sweating	Frequently present	Usually absent
Respiration	Rapid	Marked and increasing "air-hunger"
Pulse	Rapid and weak	More and more rapid and weak
Effect of intravenous infusion	More or less lasting	Transitory.
Effect of other stimulants	More or less lasting	Transitory.
Temperature	Variable; may be subnormal	Often markedly subnormal
(Specific gravity of the blood	Increased	Decreased)

Shock from the Toxic Effects of the Anesthetic.—Here the symptoms usually appear during anesthesia or very shortly afterwards. The patient has the ordinary symptoms of shock but of milder type. Here strychnia is important as a restoratory stimulant. The Trendelenburg position should be used as the pathology of this form of shock is often cerebral anemia. Artificial respiration, oxygen and dilatation of the rectum and the application of warmth should be used.

Shock Produced by Mental Disturbance.—This occurs in neurotic and alcoholic patients and those of very timid character, and often very trivial operations cause all the phenomena of profound surgical shock. Fortunately, fatal cases are exceedingly rare, the usual type being mild and transient in character. The introduction of a sound in the urethra has been followed by severe shock and the introduction of an aspiratory needle into the pleura has been followed by immediate death. Relaxation of the sphincters, polyuria or profuse diarrhea may be cited as signs of psychic shock. It is characteristic of this form of shock that it is late in developing. The diagnosis is ordinarily easy when there is present restlessness, excitability and the characteristic expression of the face, and there is absence of hemorrhage or anesthetic narcosis and especially when we have reason to believe from the character of the operation that the nature of the shock must necessarily be of neurotic origin. Delirium often follows this form of shock in neurotic patients. Extreme alcoholics usually develop delirium after traumatism.

The treatment of this form of shock is often symptomatic. If a child, remove the feeling of fear. If an alcoholic, give alcohol. All active measures or excitement should be avoided. Rest and perfect quiet, as far as possible, should be enforced. Bro-

mides are highly recommended. The alleviation of pain by morphine is often necessary and morphine can be readily used, as this form of shock is often late and after the secretion of the kidneys has been established.

OPSONIC INDEX AND VACCINE THERAPY.

By RENE BINE, M. D., San Francisco.

For many years scientists have been trying to explain the phenomena of immunity. Pasteur ascribed the death of the germs in the body to the exhaustion of suitable food. Others thought that the germs secreted products which gradually produced their own destruction. The theories which have enjoyed the longest life are those generally known as the cellular and the humoral, and their advocates have been divided into two schools. According to Metschnikoff and his followers, certain movable body-cells prevented or inhibited microbic invasion. On the other hand, Pfeiffer, Buchner, Bordet and particularly Erlich, have contended that the germs do not prosper in the system, owing to the antagonistic action of substances in the body-fluids. More recently Buchner has admitted that part of these substances undoubtedly have their origin in the polymorpho-nuclear leukocytes, thus seemingly abandoning the purely humoral theory. Metschnikoff, however, maintains that the substances actively concerned in the destruction of infecting bacteria, never act outside of the leukocytes. Neither theory has satisfactorily explained all questions. If, as Erlich assumes, immune substances are produced by those cells upon which bacteria exert their nefarious action, how may one interpret the natural immunity towards the many harmless saprophytes? And if Metschnikoff is correct, why do not phagocytes attack all bacteria? If we admit that active immunity has educated the cells to withstand certain bacteria, why is it that if in passive immunity the cells are stimulated, this immunity is exhibited only towards certain micro-organisms?

The work of Denys and Leclef,[1] Leishman,[2] Wright,[3] and Douglas[4] has resulted in the elaboration of a new theory, a theory which takes a stand really midway between those of the cellular and the humoral schools. This theory admits the fact that the remarkable activity of the leukocytes is a great factor in defending the system, but it maintains that the leukocytes are powerless to destroy the bacteria unless these have been previously influenced or prepared by the action of certain substances in the serum. These substances were given the name of "opsonins" by Wright, and he particularly emphasized the importance of estimating their amount in individual cases for diagnostic and therapeutic purposes.

The object of this paper is to call attention to the results obtained by the use of bacterial vaccines, generally speaking, and to show why the technic of determining the opsonic index was destined, in its present form, to meet with disfavor.

In order to disillusionize any who may think that Wright has given us an unassailable theory as to the causation of immunity, the following facts, as yet unexplained, are simply mentioned.

a. The bacteria of the same group as the bacillus of diphtheria are taken up by the leukocytes as well with heated serum as with normal serum. The question arises as to whether this is due to spontaneous phagocytosis in the absence of opsonins, or whether it is due to the presence of a thermostabile opsonin (all others are thermolabile).

b. Many experiments with corpuscles obtained from various animals have shown that very infectious strains of germs are frequently more easily taken up by the phagocytes than less virulent cultures. This would seem to place our capillary tube experiments in contradiction with animal tests. For it has been similarly shown that a normal serum markedly bactericidal for anthrax, is by no means an indication of an animal's corresponding resistance to the disease.

For the *determination of opsonic indices* of patients, we require (1) normal sera for controls and the sera of patients, (2) washed corpuscles, (3) bacterial emulsion.

To obtain these various sera it is best to use the curved glass tubes devised by Wright. By wrapping a piece of bandage around the finger, a venous congestion is produced. One end of the closed glass tube, drawn out to a point, is used to stick the finger near the root of the nail. Both ends are broken off and blood is drawn up through the short limb, the lumen of which must not be too narrow. The straight end is again sealed with the flame, at a distance of 4 to 5 cms. from the body of the tube, so as to avoid heating the blood. The rarefied air now contracts and the blood is drawn further in, leaving the other end a bit free, so that it, too, can be sealed, though this is not necessary if it is to be used immediately. (One must always use freshly obtained sera in this work, as the opsonic power is gradually lost on standing, and this loss varies with different sera.) The blood is allowed to clot, and the tube suspended by its bent limb into the tube of a centrifuge and centrifuged. The serum being thus obtained, the bent limb is snapped off.

(2) A few drops of blood are received into a small glass tube two-thirds filled with 1.5% solution of sodium citrate. This solution disintegrates rapidly, so that it is best to make fresh solutions daily. The blood is well mixed and the tube centrifuged until the corpuscles settle. The clear fluid is pipetted off, and the corpuscles mixed with enough 0.85% salt solution to fill the tube as before. After again centrifuging and removing the supernatant fluid, the corpuscles are mixed, and are now ready for use. No attempt is made to preserve the thin gray upper film, rich in leukocytes, this having been found useless and time consuming. These corpuscles can be obtained from any person, provided that they are not subject to agglutination with other sera; it is more satisfactory to have the

worker furnish his own, and as they do not preserve their integrity after several hours' standing, this must be done daily. In making a series of counts, one must use the same tube of washed corpuscles throughout the series.

(3) The making of the emulsion varies with the organism used. For tubercle it is by far the easiest to use the dead, dry bacilli, such as may be obtained from Meister Lucius Brunning, Hochst, a. M. A small amount of this product is ground up in an agate mortar, first alone until finely powdered, then adding very slowly, drop by drop, 1.5% salt solution until first a paste and then an emulsion are made. Great care is required in all this to avoid, as far as possible, the presence of clumps. The emulsion is then sterilized (60° C. for 1 hour). It cannot be used for more than 10 days. It is kept in tubes with one end drawn out, so that the clumps which settle can be removed by cutting off this end, and the upper opalescent layers used. The emulsion should always be examined before use. If clumps are present, centrifuging is necessary. If not enough bacilli have remained in suspension, a new emulsion should be made. For making emulsions of other bacteria, a platinum-loopful of the growth from a live agar culture is diluted with 0.85% salt solution, and mixed thoroughly.

One volume of washed corpuscles, one of serum and one of bacterial emulsion are drawn up into a pipette and then blown out and thoroughly mixed on a clean slide, then drawn up into the pipette again and the end sealed in the flame. This must be done carefully but rapidly so as to exclude all possibility of spontaneous phagocytosis. The mixture is then placed in an incubator at a temperature of 37.5° C. For this work Dr. Freeman has devised an incubator with 20 tubes into which can be placed the glass pipettes. This instrument has been called an opsonizer.

After a definite time—20-30 minutes—the pipette is removed from the opsonizer, the end cut off and the contents used for examination. A drop is received upon one end of a slide, previously roughened by vigorous rubbing with emery paper, and the smear made by means of a so-called spreader. This is a slide, so broken as to give a barely visible concave edge. The white blood corpuscles adhere to the spreader until the end, and thus a film is obtained with almost all the W. B. C. at the very edge. Smears are fixed in corrosive sublimate solution. Tubercle is stained according to the Ziehl Neelsen method, other bacteria with carbol-thionin or methylene-blue.

The average number of bacteria ingested by one W. B. C. is the phagocytic index:—P. I. All polynuclear cells must be included in the count, excluding, however, those which have ingested obvious clumps of bacteria. and avoiding those parts of the slide where the cells are broken up, or where cells or bacteria are poorly stained. The patient's P. I. divided by the normal P. I. (the average of at least three tests with different healthy sera) gives the opsonic index:—O. I. For example:

Average normal: 100 W. B. C. contain 375 bacteria. P. I., 3.75.

Patient's serum: 100 W. B. C. contains 225 bacteria. P. I. 2.25.

And 2.25 divided by 3.75 equals 0.6, the O. I.

It is useless to count less than 100 cells, and while some claim that basing a result on less than 1,000 [21] cells is an error, the writer's experience has shown him that following the above rules in counting, different workers will obtain fairly constant results with the same slide. The entire technic must be accurately carried out. Improperly washed or aged corpuscles, inconstancy of temperature or period of incubation, varying density of emulsion, the use of pipettes of varying caliber, etc., so influence results as to make them valueless.

Instead of the methods which have been recommended to standardize the emulsions used, e. g., comparison with chemical suspension, counting the bacteria to the cubic millimeter, etc., it has been found [5] that the making of a preliminary index determination with the normal serum as a control, is easier to carry out. Working with bacteria other than tubercle, the culture used should always be of the same age, to obtain, as near as possible, uniformity as regards their virulence.

Another possible source of error may be eliminated if the same volume of corpuscles is used for each test. This might occur if blood were used from the patient, instead of washed corpuscles and serum. The latter has been lately advocated [6] with the idea of shortening the technic, but it seems as if it would also increase its accuracy.

The vaccines, with the exception of the tubercle, are nothing more than sterilized and standardized emulsions of cultures of the particular germ producing the infection. The organism is grown, e. g., in the case of staphylococcus, upon a broad slant agar surface, in the case of gonococcus upon ascitic agar; the 24 to 36 hours' growth is removed with 0.85% salt solution by means of a glass rod, and thoroughly emulsified by shaking in a test-tube for at least one-half hour to break up all clumps. The number of germs in the vaccine is calculated by comparing the number of germs and red corpuscles in a mixture of one part emulsion, one of freshly drawn blood, and any amount of salt solution as diluent. For this purpose one uses the same style of pipette as before, and a drop of the mixture is received on a slide and stained with any ordinary stain.

The vaccine should be kept in a dark bottle, ¼ of 1% lysol added to it to insure its keeping, and a rubber cap coated with paraffin, is used for a stopper. Instead of the cap used by Wright, a good rubber nipple can be advantageously employed. When an injection is to be made, the cap is sterilized with pure lysol and the needle stuck through it and sufficient vaccine drawn up into the syringe.

Tubercle vaccine is the "New Tuberculin Koch," though Wright has also used a bacillary emulsion made on the above principle. It appears, however, that excellent results are to be obtained with Koch's Old Tuberculin, Beraneck's, Denys' or Spengler's

Tuberculins, provided that the preparation employed be properly administered.

It must be remembered that Pasteur, Haffkine and others used vaccines to produce immunity long before Wright, but it is Wright who deserves the credit of having popularized their use.

I shall use Wright's own words in explaining the theories embodied in vaccine therapy.

"Protective substances may be defined as substances which enter into destructive chemical combination with bacteria, or, as the case may be, with other foreign elements introduced into the organism. A vaccine is any chemical substance, which, when introduced into the organism causes there an elaboration of protective substances. The bacterial vaccine inoculated, by entering into combination with the protective substances in the organism, withdraws a certain quantum from the organism. Under the stimulus of this deprivation, the cells of the organism are stimulated to activity, with the result that the protective substances withdrawn are replaced with usury.

"This is confirmed by the estimation of the opsonic index following inoculation of a vaccine. A diminution in protective substances is shown by a period of lowered index—the negative phase; this is followed by an increase of protective substances, the opsonic index is raised—this is the positive phase.

"When only a small dose of vaccine is inoculated, the negative phase may be so fugitive as hardly to appear on the record, but the positive phase will be correspondingly diminished. When an unduly large dose of vaccine is inoculated, the negative phase is prolonged and much accentuated. The positive phase may in such case make default.

"This shows that we can select the appropriate time and dose with certainty only by examining the blood and measuring its content in protective substances in each case before re-inoculating.

"For according as we choose our time and our dose, wisely or unwisely, we may obtain a cumulative effect in the direction of a positive phase or a cumulative effect in the direction of a negative phase."

If this were literally true, it is obvious that nothing could replace the *laboratory control of vaccine therapy*. Let us see whether this be so or not.

In a study of this subject [5] in regards to tuberculosis, the writer found that the normal index varied within fairly narrow limits from day to day. In tubercular patients, with the lesions located elsewhere than in the lungs, the index was usually constantly low. Pulmonary cases showed indices which fluctuated considerably, being now low, then high, according as the patients were subject to auto-inoculations, i. e., discharges of bacterial products from the seat of their infection into their general circulation. Unless the occurrence of auto-inoculations be eliminated, one cannot in these cases estimate the effect of tuberculin injections, nor even expect benefit therefrom, for cumulative negative cannot be prevented.

Auto-inoculations are eliminated, or their frequency decreased, by a period of rest in bed. After a time it is found that a patient can be allowed moderate exercise without harm. In fact it has been recently shown [7] that exercise can be so graduated, if controlled by the opsonic index, as to produce a series of auto-inoculations, with the intention of replacing the therapeutic use of tuberculin. If this could be generally done, it would be a great step in advance, for we would be inoculating our patient with tuberculin produced by his own particular species of bacilli, and this would do away with discussions as to whether in each individual case, bovine or human tubercular products should be used.

On the other hand, excellent results are being reported in cases of tuberculosis of glands, bones and skin. [8-9] In the latter, owing to the poor vascularity of the tissues involved, injections alone cannot be relied upon to do much good. In fact, vaccine treatment is not meant to replace, but to assist other methods of treatment. Practically every European clinician of note is now, with great satisfaction, using tuberculin, without the index control, in selected cases of pulmonary, peritoneal, osseous and urogenital tuberculosis. [10] In this country, the method is gaining advocates every day. [11] It is worthy of mention, that whereas patients have not only been greatly improved, but their tolerance for tuberculin raised a thousandfold, the writer has never seen or heard of an index being raised very high by treatment.

Staphylococcus infections have been most amenable to treatment with vaccines. Acne, furunculosis, sycosis, carbuncles, discharging sinuses, pyorrhea alveolaris, have all either yielded or improved so rapidly as to convince even skeptics of their efficiency. The writer has seen a case of sycosis and one of axillary abscesses complicated by a severe dermatitis, which had resisted all other therapy, clear up in about a week after the use of vaccines was begun. A case of lupus of the hand, complicated by pulmonary tuberculosis, with sputum rich in tubercle bacilli and staphylococci, and with a markedly intermittent temperature, was treated with tuberculin and occasional injections of staphylococcic vaccine for about three months. The patient remained at his work, he gained in weight, the sputum contained but few bacilli, the temperature fluctuated but slightly, and the lupus was arrested. Unfortunately at about this time business cares obliged the patient to work night and day, and he dropped the treatment until he had brought on a pulmonary hemorrhage which almost proved fatal. Rest in bed and another series of injections has again produced an arrest of the process in the lung, his temperature is normal and the lupus is almost healed. Another patient with cervical glands which had been operated, who presented several enlarged tubercular glands and discharging sinuses, and with slight pulmonary involvment, has been much improved by tuberculin and staphylococcic vaccine injections, there being but a very small spot on his neck which has not yet healed. Cases of staphylococcic sepsis [23] have been cured by vaccines

obtained by blood cultures from the patient. The writer tried this treatment on a little girl with a very severe endocarditis, but her condition was hopeless from the start, and, as expected, no benefit was obtained.

Streptococcic infections have not been as amenable to results as staphylococcic ones. Post-operative fistulas [12] have in some instances yielded to this form of treatment, while cases of erysipelas [13] have not shown, on the whole, any more favorable course than non-injected ones. Septicemias [25] have in some cases been reported as cured by vaccines. Some cases of apparently fatal puerperal septicemias [22] have been reported as cured by means of vaccines.

By the use of a typhoid serum, which is, according to Wright, really a bacterial vaccine, Chantemesse [14] has had a mortality during the last six years of 4.3% of 1,000 cases, in contrast to 17% mortality of 5,621 cases in other Paris hospitals where no serum is employed. Wright has used typhoid vaccines as a preventive measure in the English army, first introducing them in 1897. After a while his method brought forth considerable discussion, and it was abandoned. Over a year ago a commission was appointed to investigate the matter, and resulted in vaccinations being reintroduced in the army.

Coli infections of the gall-bladder, urinary bladder, uterus and peritoneal cavity have been successfully treated with vaccines. [26]

Cases of pneumonia, grippe, empyema and malignant endocarditis with sepsis are also reported, the latter treated without opsonic control. [15] Investigations on coli and pneumococci have shown conclusively that these micro-organisms vary in each host, and that probably there are many species which exhibit the same microscopical and cultural appearances. This emphasizes the importance of using vaccines made from bacteria obtained from the patient. Wainstein [27] reports three cases of post-operative fistulas, ten cases of catharrhal endocervicitis, all of which cases had resisted other treatment, cured by pneumococcic vaccines.

Gonococcal infections have certainly been benefited by vaccines. Cole [16] of Johns Hopkins reports cases of arthritis treated with excellent results, though index determinations he deems too inaccurate to be of use. Butler and Long [17] of Chicago have treated twelve cases of vulvo-vaginitis in children with gonococcal vaccines. In four the clinical evidences of the disease disappeared in from ten days to three weeks, and the gonococcus was not to be found in smears from wipings from the vaginal mucosa, taken at intervals of several days. In five others a cessation of discharge and disappearance of gonococci from smears was attained after several weeks of treatment. The last three, owing to probable reinfections, are not so conclusive as the other nine. By comparison with a series of twelve cases treated with local antiseptics, the writers conclude that the vaccine method appears to be far more efficient and scientifically more tenable than the local antiseptic method. Dr. Vail [18] of Chicago reports a series of twenty-five cases of acute and chronic urethritis treated with vaccines, and while no conclusions are drawn, it would seem as if the results were good proof of their efficacy.

Hutchings [19] of Detroit has used vaccines in thirty-two cases, there being in this series, urethritis, arthritis, vaginitis, some cases complicated by orchitis, prostatitis, cystitis or endometritis. His results are very good, but he comes to the natural conclusion that better results are to be had when other treatment is combined with bacterial inoculation.

E. Irons [24] also reports good results, especially in the chronic forms of arthritis. Results certainly justify the more general trial of gonococcic vaccines, more especially in chronic cases, such as arthritis, where our usual medication is most frequently of no value.

Vaccines made from the micrococcus neoformans have been used by the London school in cases of cancer, where they claimed the above coccus as a secondary infection is often responsible for the bad odor and rapid breaking down of tissue. Doyen of Paris is inclined to go so far as to believe his coccus the germ of cancer and uses a vaccine analogous to Wright's with apparently remarkable results, though in a study of the subject from the latter's standpoint, he was unable to find a constant normal index, nor was he able to get typical opsonic reactions with his vaccine. Though everything seems against the M. N. being the cause of cancer, no culture has ever been obtained from a closed cancer (the mammary gland is not closed), the writer is forced to admit that he saw many of Doyen's cases which seemed remarkably benefited by the treatment. It must be said that Doyen does not confine himself to his vaccine, but combines its use with whatever other method offers any chance of aiding the patient, so that it may naturally be questioned whether the same results would have been obtained without the vaccine. But in a great number of inoperative cases, seemingly hopeless cases, confirmed by pathological methods, results are certainly being obtained that are far ahead of anything the writer has ever seen.

Of three cases of cancer treated by the vaccine method, in one, a squamous celled carcinoma of the superior maxilla, Dr. Hutchings of Detroit [20] was able to prolong the patient's life several months as well as to make her much more comfortable. The other two cases, one of which was a carcinoma of the lung with lung metastasis, the second, generalized carcinomatosis from a uterine cancer, showed no benefit.

CONCLUSIONS.

1. Wright's researches have greatly advanced the study of immunity. Opsonins are apparently different from all the other anti-bodies.

2. Leaving aside the question of accuracy of technic, the estimation of opsonic indices is too difficult and time consuming to be of practical use in therapy.

3. In many forms of tuberculosis, in acne, furunculosis, gonorrhoeal arthritis, vaccines are our most effective weapons; in other infections they frequently give us excellent results.

The question as to the value of the opsonic index in diagnosis has been purposely omitted from this discussion.

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CEMENTWORKER'S ITCH.

Translated by D. W. MONTGOMERY, M. D., San Francisco.

René Martial has just published an article in the Revue Pratique des Maladies Cutanées (*) that should be of interest to physicians in San Francisco. It appears that cement frequently acts very harshly on the skin causing an irritation of the hands, breast and face, and it is very necessary, because of the difference in treatment, to distinguish the eruption from scabies, which it is apt to resemble.

The use of cement has increased particularly in San Francisco since the fire, and we therefore may expect to run across this particular affection with growing frequency.

What is cement? Cement is a mixture of carbonate of lime, silicic acid, alumina and iron ground up together and exposed to heat. It contains from one to five per cent of sulphuric acid as sulphates, two to five per cent of magnesia, and from eight to ten per cent of alumina. According to its composition it will "set" in from two to fourteen hours. Many samples of cement, analyzed by Martial, contained from 0.80 to 1.20 per cent of caustic soda.

Varieties of Cement. Its harmfulness. As can be seen by the enumeration of its constituents, cement is chemically very active, and contains many substances irritating to the skin, as carbonate of lime, silica, magnesia and sulphates. The activity of these substances is still further increased because of the water with which it has to be mixed. The water macerates the skin of the workman, and at the same time increases the chemical activity of the substances in the cement, causing them to bite more viciously into the integument. As a rule, the quicker a cement "sets" the more dangerous it is to work with. The hands of the workman, as being most exposed to the chemicals, suffer most severely, but with those who work on vaults and ceilings the face, especially the periorbicular region, is often affected. Moisture is a predisposing cause, and erosions or cuts of the hands for example are frequently starting points for the eruption.

Description. The elementary lesion of the eruption is a papule, very small at its commencement, scarcely larger than a small pin head, which soon grows to the size of the head of an ordinary pin. This eruption is very itchy and this itchiness, like that of scabies, increases with the heat of the bed. Through the itchiness and consequent scratching the papules grow rapidly larger and become excoriated, and covered with a thin, black crust. In acute cases there may be edema of the fingers, back of the hands and forearms. As in the true itch the eruption shows a predilection for the webs of the fingers, and tends to be grouped about the wrists, about the bend of the elbows, and even in the axillae. As the men often work with shirt thrown open, the eruption frequently appears over the breast.

Contrary to the true itch there are very few lesions of the palms or of the thenar eminences, and the eruption often appears on the face, where it never appears in the true itch. Of course there are no burrows as in scabies.

Complications. The above is a description of the primitive eruption, that, however, shortly alters its appearance. When the attack has lasted some time the lesions extend, and flatten out, larger papules appear that are vaguely polygonal, polished, red, and quadrilliated, and that become confluent, in short lichenification appears; or the excoriated papules become confluent seap and become eczematous. Lichinified and eczematous patches are found side by side. On becoming eczematous the eruption may extend to other parts of the body, as in other professional eczemas. The itchiness becomes so lively that the patient is unable to sleep, and moistens his hands constantly in cold water. The affection is always graver in summer than in winter, and seems clearly to be intensified by the sweat. Finally the lesions can become infected and give rise to pyodermites, but this is quite rare.

Duration. The duration and the intensity of the eruption are variable. One patient was afflicted for five months. Ordinarily on ceasing work the eruption clears up in one or two weeks.

Diagnosis. The diagnosis is easy if one thinks to inquire into the patient's occupation. The mimicry with scabies is, however, striking, and one must remember that a patient may have cement dermatitis and scabies at the same time.

Treatment. The treatment in the first place consists in stopping work and in the application for two to three days of Lassar's paste, which Martial advises to be made of equal parts of vaseline, lanoline, starch and oxide of zinc. The hands may first be soaked well in weak coal tar lotion, and then carefully dried before applying the paste, or five per cent of oil of cade may be added to the paste. Or tar glycerole may be used at first weak, afterwards stronger, applying it day and night, or tar glycerole may be applied at night, and talc powder used during the day. If the eruption is acute with edema and leeting, hot compresses may be used or warm potato starch poultices; if there is infection boric acid compresses may be employed.

In some workshops thick gloves are furnished the men, and those that work on ceilings and vaults should wear large protecting spectacles.

* July, 1908.

Notice!

The State Society meets at San Jose, April 20, 21 and 22, 1909. Make your plans early and be sure to attend.

The A. M. A. meets in Atlantic City, June 8 to 11, 1909. Don't fail to attend.

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POLYCLINIC GATHERING.

Cases presented by Dr. Campbell for Dr. M. Regensberger.

Case No. 1: This patient is 70 years old. He came to the clinic in May, 1908, since that time he has had two treatments a week for this epithelioma of the nose. He first noticed this growth in 1885. He was treated before the fire by Dr. W. Lehmann at Lane Hospital. During the period following the fire he was unable to have treatments. When he came here in May the trouble was much more extensive than it is at the present time. There is no specific history. Diagnosis is epithelioma. He has had two X-ray treatments per week for ten weeks. To-day patient had a severe fall on his nose which looks very bad to-night. We intend to demonstrate a course of thyroid extract in this case in connection with X-ray treatments.

Case No. 2: Mrs. I, aged 60. Diagnosis, rodent ulcer. Patient came to us on July 20th. She has had trouble over the eye beginning under the angle of the right eye. The scar is on the nose extending over the eye and was quite angry looking when she first came here. She has had X-ray treatments ten minutes at a time twice per week. When she first came the ulcer bled very easily, but it does not bleed any more. The outer angle of the wound is thickened considerably, showing the reaction of the X-ray.

Case No. 3: Diagnosis, epithelioma. Mrs. A. Patient first came to us July 29, 1908. Patient first noticed trouble six or seven months ago when a little pimple appeared on the right side of the nose. When she first came it was covered with a black eschlar and on removing that a crater-formed looking ulcer was found underneath. She was first given a paste to put on it and told to come back for X-ray treatment. She has had six treatments and it has diminished nearly one-half in size. It is beginning to look smooth on the base and has improved very much indeed. This case has been given iodide intermittently in small doses.

Case No. 4: Keloid. This patient gives a history of nineteen months duration. There are linear raised lesions on both sides of the cheek. They are quite painless and are said to have followed being cut by a razor. He has had a paste of resorcin, but has also had X-ray treatments. Dr. Freytag does not think that this case has improved but we think it has grown a little thinner, especially the scar on the right cheek.

Dr. Welty, discussing cases presented by Dr. Campbell: With regard to the keloid case, I saw one case of keloid of the ear and it passed up to the clinic without a diagnosis being made until Prof. Politzer came in and he told us what it was. He took the whole ear off and a wax ear was made to take its place. In this particular case would it be possible to remove the keloid growth, and close the wound by the stitch that makes its appearance just below epidermis? It would improve his appearance very much.

Dr. Levison, discussing cases presented by Dr. Campbell: There are one or two points mentioned by Dr. Freytag, with regard to the treatment of growths by the X-ray. The first point is the statement that the X-ray does not do any harm. This is correct so far as the injurious chemical effects are concerned. The injury is done by the radiographer, who continues to treat the cancer in the hope that he will be able to cure it. He thus loses the only possible hope of curing the patient, as I have seen on several occasions where malignant growths have been treated without result. They not only have not been able to cure the cancer, but they have allowed it to develop, so that it became impossible to accomplish the cure by means of the knife. The French Surgical Congress, which convened a year ago, arrived at the conclusion that those growths which the X-ray succeeded in curing could have been cured with the aid of the knife, and those tumors which were inoperable could not be satisfactorily cured by the use of the X-ray.

In the case of the rodent ulcer, which Dr. Freytag has demonstrated, the X-ray offers an ideal method of treatment, because of the defect resulting from surgical operation, which can only be remedied by an extensive plastic operation. I fear that the X-ray people are losing sight of the fact that cancer can be cured by the use of the knife.

Another point is the treating of cancer by fulguration. Reports go to show that this procedure exercises a destructive influence upon the cancer cells, and also stimulates the proliferation of the sclerotic tissue.

In answer to Dr. Welty's question concerning the effect of operation on keloids, I might state that I have had considerable experience with this condition. Even when the growth is incised well into

the healthy tissue, and the skin carefully approximated, the process will recur in many instances. Some two and a half years ago I performed an operation for appendicitis, and the skin was carefully brought together. A keloid developed in the scar; it was subsequently removed. The growth recurred and it has just been cured by the employment of injections of thiosinamine, used three times a week in 15 per cent alcohol. Dupuytren contractures are also cured by this method.

Dr. Ryfkogel, discussing cases presented by Dr. Campbell: There was a case about four years ago that came to me with an early cancer of the breast. I advised operation and she was willing, but was urged by friends to go to a physician who was beginning to do X-ray work. When I saw her six months later I had to take off the arm as well as the breast in hope of saving her life and then could not do so. I have seen a number of these cases treated by the X-ray until too late for the knife. Speaking of these tumors, a good many surgeons are beginning to recommend the use of the X-ray for a different type of tumor. You remember the remarkable effect the X-ray has on the early embryonic tissue, particularly the cells of the testicle. You will remember that X-ray very rapidly produces azoospermia in animals and man. On this basis surgeons have begun to treat sarcomata with the X-ray. You all know the almost certain recurrence of sarcomata of certain types such as the mixed cell and the large and small round cell sarcomata. They practically all occur in the scar and it is supposed by many that there is some systemic condition that causes trauma to produce the sarcoma in certain people. You will also remember that Micvulitz had results from resection more satisfactory than from amputations and upon the basis of these two facts there has been a good deal of work recently on sarcoma by sub-capsular removal. The sarcoma is scooped out and afterwards treated with the X-ray and some very remarkable results have been obtained, much more so than with the wide removal by the knife.

Dr. Hannah, presenting case: I wish to present in interesting case of a boy six years old. He has had a phimosis since birth. The right testicle is down and the left is just below the external ring. Two months ago while playing on the street he ran against a water faucet and had considerable pain for a couple of days and then the pain stopped. Since then his mother has noticed a swelling in his right groin which is over Poupart's ligament and can not be reduced. It fluctuates and there is a little enlargement of the glands around the femoral opening. This is very interesting, because there is no hernia.

Dr. Silverburg, discussing case presented by Dr. Hannah: It is hard to come to a conclusion as to what the diagnosis is in this case. It does not seem to be connected with the spermatic cord. It does not seem to be in the nature of inflammation, eliminating these possibilities, the question is, is it a hematoma occurring after his injury? The skin does not show any discoloration. It is not connected with the lymphatic system. It is noticeable that the femoral glands are enlarged as well as the inguinal. It might be connected with the lymphatic system, possibly a lymphoma following injury.

Cases presented by Dr. Ryfkogel: This patient was operated on eight years ago by Dr. Bazet for goitre. On careful examination one can still find remnants of the thvroid, the size of a walnut, under the sterno mastoid muscle. When the patient first came to us it was a little difficult to get correct data, as he was a little dull at that time. He was very slow and sluggish in speech and somewhat disinclined to make any mental effort to recall his past symptoms. On examination his skin is dry and scaly in some places. The hair is also dry with a tendency to fall out, the finger nails also fall off on the slightest pretext. He came for a considerable thickening of one finger. He said that a doctor had opened it and let some pus out; just how much this thickening is due to fibrous and how much to myxomatous infiltration it is difficult to say. The man complains of some deafness at times. We put him on thyroid extract and he is very bright now in comparison and very much changed. He says that his father looks like him and the interesting question is how much of this condition is congenital cretinism and how much is due to myxedema following operation. The shape of the head is suggestive of mild cretinism as also are short arms and legs and the general build. The super clavicular pads are seen both in myxodema and cretinism. He has, however, no sign of edema anywhere. His face was at first slightly suggestive of it, but now there is some improvement. The skin is not now so dry as it was and has improved under thyroid extract. His symptoms, of course, are vary mild because there has been a great part of the gland left. He did not know that there was anything particularly wrong with him, but it was perfectly evident to us at the examination. You will notice the little papillary bbromata on his elbow. These are particularly interesting. They are so often seen in these myxedematous cases. Upon section they are fibroma with what is evidently myxedematous infiltration between the fibres. The same condition is found on the knees. I have seen these bodies more resembling typical warts, but not these curious salmon-colored tumors which you see here.

Case presented by Dr. Levison: The patient, a boy of nineteen years of age, who for the last year has been complaining of sore feet, has been treated in the usual way for rheumatism, without effect, so that when he was seen by me he was practically invalided, walking only on his heels because of the fact that it was the point of both feet which was least painful. I examined him carefully and the first condition that suggested itself was flat foot. Examination, however, showed that this condition was not present. Very careful palpation of the feet revealed tender points, upon pressure, in both heels, also at the point of insertion of the tendo-Achilles into the os-calcis, a tender point in the instep, and one on the outer side of the foot in the meta-tarso phalangeal articulation. The clinical diagnosis of multiple exostosis of a gonorrheal origin was made. The patient, however, denied all history of gonorrhea, and the expression of the prostatic secretion revealed nothing. The X-ray pictures of his feet were taken, and showed sharp exostoses, about 1 cm. in thickness, projecting from both heels. Much roughening was to be seen under the above described point of the tendo-Achilles, also on the outer side of the foot, so that the clinical diagnosis was confirmed, excepting from an etiological standpoint. At the operation all of these exostoses were chiseled off, with the effect that the boy is now comparatively restored to health and usefulness. He now walks without difficulty and is able to work. I realize that this process is not unusual, but I have presented it because of the numerous incisions that were made to relieve the condition.

Dr. Carpenter, showing specimens: I wish to present two specimens of vesical calculus. These are rare only in size and the fact that they were found in the female bladder. I took this first one out thirty days ago, and thought at the time that it was a good-sized stone. It caused the ordinary symptoms of vesicle calculus. About three or four days ago I took this other one also from a female bladder. The interesting fact about this stone is that the patient is a woman 71 years of age, and has carried the stone between 10 and 20 years. She has been treated for all sorts of things, but no one discovered the stone. Both of these I removed by vesico-vaginal section, making my closure without drainage, and both cases

healed by primary union. The first closed without any drainage and never had a sign of leakage. The last one I did last Friday and the patient is doing nicely. There was some difficulty in getting the stone through the vesico-vaginal section; it is evidently a phosphatic stone. The larger one weighs 1400 grains. These two stones, however, are not as interesting as two others I have obtained in the interim, also from the female bladder. They both occurred in the same patient. She was a patient whom I had operated upon previously for vesico-vaginal fistula, the result of severe instrumental delivery in the country several months prior, in which the symphysis had been separated 2 inches, tearing the urethra from the bladder, necessitating quite an extensive plastic operation. In closing the opening in the bladder I foolishly used silk. I passed the suture from the vagina through the entire vaginal wall and bladder wall to its mucous membrane, and probably through its mucous membrane. Had I known whether it went through or not I would not have cared because I knew it would cut through and that would be the end of it. I put in two such sutures, tying the knots on the vaginal surface. The loop of the stitch buried in the mucous membrane afforded a nidus for the accumulation of the phosphatic deposits of the urine and held it there, and once it had formed it increased. The patient subsequently complained of the ordinary symptoms of stone in the bladder. It was not readily discovered. Cystoscopic examination showed but one stone not larger than the end of a finger, yet too large to come through the cystoscope. I passed the forceps through the urethra, got the stone with some little difficulty, but after getting hold of it it did not readily come away from the bladder wall, as it was being held by this stitch, but I thought I had a fold of the mucous membrane. After delivering it I found adhering to the stone the loop of silk, the adhesion between stone and silk being at the point of the loop opposite to the knot, making it evident that the weight of the stone dragging on the loop had caused the thread to cut its way through the vaginal and bladder walls, the tissues closing behind the stitch, permitting no stitch hole leakage, and stitch ultimately delivered from inside of bladder. A week later I had the same experience with another stone and another stitch in the same bladder. The patient is now well.

PYELO-LITHOTOMY.*

By JOHN McMAHON, M. D., San Jose.

C. H. A., aged 63 years, occupation merchant, weight 150 pounds prematuredly aged, due to a Bohemian life.

Nine years ago began to have attacks of renal colic, with severe pain extending to bladder and right testicle, causing vomiting. About two hours after cessation of these attacks the urine would become bloody and contained a large quantity of pus. These attacks would come on every few days. Cystitis developed and he was unable to retain more than three or four ounces in bladder. Had to rise several times at night to urinate, each time passing about half a cup of "milky urine tinged with blood and accompanied with severe rectal pains." More or less constipated all the time, with appetite capricious. X-Ray examination revealed stone in right kidney. Operation: Incision beginning 3¼ inches to the right of the median line of the spine, and 1½ inches below the twelfth rib, extending down to one inch above crest of ilium. Length of incision eight inches.

Kidney was brought into lumbar wound, and opened longitudinally, and a stone weighing 423 grains, two inches in length, one inch in diameter was removed. The lower pole of the kidney was distended by a large abscess in which the stone was lodged. The kidney abscess was flushed with normal saline solution, drainage tube inserted into abscess cavity around which sterile gauze was packed, tube removed on fifth day, wound healed by twenty-first day, able to take a ride on 28th day, complete recovery.

Composition of stone, urate of soda, uric acid and soda phosphate.

* Read before the Santa Clara County Medical Society.

THE GERMAN HOSPITAL QUESTION.

To the Editor of the State Journal.

Dear Sir:—As on a previous occasion, I ask you again to kindly publish a few remarks, which are written down by me after reading your editorial in the November, 1908, issue, relating to the German General Benevolent Society and the German Hospital of San Francisco.

There exist unquestionably a number of lamentable conditions amongst medical institutions in this state and the medical profession; and it becomes a duty of the medical press to lay the finger to the existing sores, to criticize and to remedy. But I believe in two things: First, that good can come of these discussions only when they are conducted in a temperate manner, when adverse criticism is well founded; and second, when existing evils are exposed without fear and without partiality.

Reading your aforesaid editorial and the notes about the University of California Hospital contained in the same issue, I am forced to two assumptions: First, that your knowledge of the true standing of the German General Benevolent Society needs some correction and enlargement: Second, that yourself and the men who have posted you in regard to the University of California Hospital, are not grasping fully the situation of commercialism as displayed in the University of California Hospital.

Let me explain both items! In well (or if you prefer, in much) governed states, such as the German Empire, the care for the sick and injured of moderate earning power has been developed to a very high degree as a branch of the science and practice of Sociology. The small wage-earner contributes a trifle, the employer adds something, the government adds something more, and these contributions form large resources; all this is done under legislative compulsion for the insurance of certain classes of people with small income. If an insured becomes sick or is injured, he (or she) does not need to ask for charity; he (or she) does not become a public burden; but he (or she) is entitled legally to treatment, medicine, compensation, etc., during his or her inability to work, paid for through the accumulated resources.

In this free country of these United States such compulsory insurance is impossible; here, as in so many other things, private enterprise takes the place of the parental government abroad. Many associations have been formed to insure to members medical aid in case of sickness or injury. The German General Benevolent Society is one of the many. There are in this German Benevolent Society a few thousands of people with moderate or small income: many a servant girl, workingman, etc.; they pay $1.00 a month of their hard earned money; when they become sick or injured they do not become a public burden in the County Hospital; they are not compelled to beg for admission to one of the so-called charity hospitals of this city; they do not engage a physician, whom they never expect to pay—but they go to the German Hospital for free treatment, to which they are entitled.

It is human nature, that not a few are anxious to gain the advantages of the German General Benevolent Society, who should never do that; some do it because they think it smart to beat a doctor out of a fee; others because they honestly believe that it is the same thing as to insure against losses through fire, etc.

But notwithstanding these objectionable features, I honestly believe there is no disputing the right (sociologic justification) of people with small means to insure themselves medical attendance in case of sickness by forming or joining mutual aid associations. The difficulty lies in the attempt to define who shall and who shall not be allowed to join such associations.

It is here, where discussions and propositions have to be made, that some understanding will be reached. Discussions based on facts! Let me inform you that not "every stick and stone" in the German Hospital has been paid for by the physicians of California, by the very simple reason that many sticks and many stones and other things of the hospital are not yet paid at all! The money,—that the German General Benevolent Society is in debt, that money certainly cannot have been taken out of the pockets of physicians in California.

Such unfounded criticism, such stump-oratory does not do any good; especially not when partiality is shown. You stigmatize the German General Benevolent Society as the worst enemy of the medical profession in California, because it "takes money out of the physicians' pockets," and in the same breath you praise the University of California Hospital immeasurably; and yet this University of California Hospital does the same thing that you allege the German General Benevolent Society does: the University of California Hospital "takes money out of the pockets of the physicians."

The University of California Hospital is located in a building erected by the taxpayers of California, the University of California Hospital is fitted up by money given for charity purposes. This money of the taxpayers of the state and the charitably inclined citizens (of whom you enumerate quite a number) is used to compete with those physicians of the state who own and maintain private hospitals (and they are many)! Every paying patient in the University of California Hospital should go to a sanatorium owned and conducted by physicians of the state; every cent and every dollar that is paid by private patients of the University of California Hospital to the treasury of the University of California Hospital for maintenance should be paid to physicians who own and conduct a sanatorium; every such cent and dollar is diverted from physicians of the state, or to use your own language, that "money is taken out of the pockets of physicians of California." The University of California Hospital being established by taxpayers' money and by money furnished for charity work is running in unfair competition with physicians (and other people), who are engaged legitimately in the business of conducting a sanatorium with their invested money.

There are more such institutions in San Francisco beside the University of California Hospital which succeed admirably to mix business and charity; St. Luke's Hospital, the Children's Hospital, the California Woman's Hospital, are all in the same boat; charity and business confounded and mixed in a most extraordinary manner!

It is certainly appropriate that a free and general discussion of the existing nuisances in medical aid societies and hospitals be had; but as I said before, facts, impartiality and temperate language are demanded, if any good is to be expected.

To begin the discussion by calling each other hard names, is to implore failure from the start.

Let us get together and talk it over, like gentlemen! We physicians of the German Hospital are most anxious to wipe out existing evils; we can accomplish this only with the assistance of the medical profession and the medical press. To insure us the aid of the medical press as well as of the medical profession, these foregoing remarks are written down.

Yours respectfully,

DR. HENRY V. KREUTZMANN.

SACRAMENTO COUNTY.

The regular monthly meeting of the Sacramento Society for Medical Improvement was held on Tuesday evening, October 27th, at the residence of Dr. G. C. Simmons, Dr. McLean being in the chair. Dr. F. E. Shaw of Sacramento was unanimously elected a member. Dr. Hatch reported the epidemic of diphtheria which occurred in the Southern California State Hospital last April, and its recurrence two months later, although all the inmates had been treated with antitoxin the first time. Cultures were taken from the throats of everybody in the hospital and 12 per cent were found to be "carriers" of the Klebs-Loffler bacillus. Isolation and treatment have reduced this percentage to about 7 per cent. An examination is being made of the patients in the Stockton State Hospital where there is no diphtheria for the purposes of comparison.

Dr. Twitchell stated that the Germans are trying to stamp out typhoid fever especially at the military posts along the Rhine. In one insane hospital in Bavaria, where the stools of all the patients were examined, twelve were found to be "typhoid carriers" with no symptoms, and were put in a separate ward.

The society placed itself on record as favoring a National Department of Health. The paper of the evening was read by Dr. G. C. Simmons; subject, "Concurrency of Diseases." The discussion was led, pathologically, by Dr. Turner, and, clinically, by Dr. G. E. Simmons. Among the rarer combinations of diseases reported were diphtheria and scarlet fever, scabies and secondary syphilis, diabetes and gonorrhea, syphilis and plague, chronic interstitial nephritis and cancer of stomach and pertussis and measles.

Malaria and typhoid are rarely associated in this neighborhood, although the report of the Panama Commission (50 per cent of the cases) shows that they may be common. Dr. Nichols stated that when he went to college students were taught that two diseases could not occur in the same individual at the same time, and for that reason patients were often purposely salivated.

The meeting adjourned to partake of Dr. G. C. Simmons' hospitality.

E. C. TURNER, Secretary.

SANTA CLARA COUNTY.

The regular monthly meeting of this Society was held Wednesday evening, October 19th, at the Hotel St. James with the following members present: Drs. Jordan, Brown, Wright, Miller, Marvin, Whiffen, Miner, West, Baker, Ulrich, Keith, Kapp, D. A. Beattie, Belknap, Wagner, Goodridge, Newell, Wilson, Kocher, H. B. Gates, Hervey, Moyer, Paul, Hopkins, J. I. Beattie, Harris and Park. The visitors were Drs. Hare, Bullock, Benepe, Thomas, Sanborn, Bowen, Glaze and Nesbit. Dr. Benjamin Thomas and Dr. Anny G. Bowen were elected to membership.

Dr. H. C. Brown gave a paper entitled "Observations in the Workshop of a Surgeon." Dr. Brown's paper dealt with the workings of the hospital conducted by Drs. Mayo of Rochester, Minn., and to

those present who have never been to the Drs. Mayo clinic, the paper was very interesting. To those who have been to Rochester, the paper brought back many pleasant recollections. The next paper was by Dr. H. B. Gates on "Bier's Treatment by Hyperemia." Dr. Gates having recently visited Bier's clinic and observed its workings, his remarks on the subject were very interesting. Dr. Gates also brought before the members, a patient upon whom he had used the treatment for an ankylosed wrist joint, as well as showing the method used in applying the constriction. Dr. Kocher opened the discussion on Dr. Gates' paper, as well as bringing for inspection, many forms of cups used in connection with the Bier treatment (the only form of cup missing was a stein). After the meeting the members assembled in the banquet hall where an hour or so was pleasantly spent.

K. C. PARK,
Secretary.

SHASTA COUNTY.

The Shasta County Medical Society met in regular quarterly session with Dr. Thos. W. Huntington and Dr. Philip King Brown of San Francisco, as guests. The morning was spent at the County Hospital, where Dr. Huntington performed a plastic operation on the upper eyelid of a man for severe ectropion, due to contracture resulting from a burn sustained by falling into a camp fire during an epileptic fit. Other interesting cases, both medical and surgical, were presented for consultation and discussion by our distinguished visitors. The society sat down in a body to an elegant and substantial lunch at the Hotel Lorenz.

The afternoon session was called to order at 2:00 p. m. in the Ladies' Room of the Elks' Hall by the President, Dr. C. J. Teass of Kennett. There were present at this meeting twelve laymen, all women, with goitres in situ or extirpated in part. They served as "clinical material." Dr. Brown reviewed in a succinct manner, the whole subject of goitre in its various forms and phases, using popular or technical terms as occasion demanded. He dwelt particularly upon the exophthalmic variety. He considered its treatment by the old-time remedies as useless or foolish; by the animal preparations as capricious and mostly disappointing; but he still had hopes in the newer serums. He maintained that surgical intervention offered the only assurance of relief. Dr. Huntington then spoke of the surgical treatment of exophthalmic goitre. He called attention to the anatomical relations which must be born in mind during the removal of the gland and to the necessity of leaving a part of the thyroid sufficient to carry on its normal function.

Dr. Huntington's main object was to emphasize the importance of the conservation of the parathyroids, whose location, smallness and independent blood supply placed them in jeopardy during the operation. The injury or removal of all of them gives rise to tetany, but if only a part of the bodies are destroyed the remainder have been found capable of rapid compensatory hypertrophy, assumption of full function and avoidance of the spasms.

A general discussion followed and the society gave a vote of thanks to Dr. Huntington and Dr. Brown for their visit and for their interesting handling of the subject. Dr. Teass read a report of the world's literature on gun shot wounds of the heart with recovery. He presented Constable Timothy Foby, who had been shot four months previous through the right ventricle and left lung and had been operated upon three days afterward for seropyopericardium with drainage. This case will take first rank as a unique phenomenon in the medical world.

Dr. R. F. Wallace read a report of an autopsy of a stab-wound of the heart. Dr. C. A. Mueller of Knob, Dr. C. E. Thompson of Dunsmuir, and Dr. E. E. Thompson of Sisson, were elected to membership. Dr. L. A. Bauter, Redding, was reinstated by vote of the society. The officers elected for ensuing year are: President, Dr. S. T. White, Redding; Vice-President, Dr. Wm. C. Tuckerman, Kennett; Secretary-Treasurer, Dr. B. F. Saylor, Redding.

A vote of thanks was tendered to the Elks for the use of their rooms. The meeting was brought to a close by a sumptuous banquet served at the Golden Eagle in the evening. There were fourteen practitioners present.

DR. B. F. SAYLOR,
Secretary.

SONOMA COUNTY.

The Sonoma County Medical Society met at the Home for Feeble Minded, Eldridge, Cal., on the afternoon of the 6th inst. Dr. Edward Gray read a paper on "German Measles" which the Society wished published in the Journal. The Society was entertained by Dr. Dawson, a clinic of half a dozen different diseases.

The next meeting will be held at Santa Rosa at which time tuberculosis will be discussed.

The Sonoma County Medical Society heartily endorses the plan of the A. M. A. in its endeavor to send good lectures to various county societies and to other places where there is no society. The president of the State Society with the county president should work out the plan and present same to the various county societies, so that we may get together for the benefit of not only the physician but the laity.

G. W. MALLORY,
Secretary.

VENTURA COUNTY.

The Ventura County Medical Society met at the office of Dr. Chas. Teubner in Saticoy, on the evening of October 12th. Paper by Dr. Teubner, subject "Rabies"; a lively discussion by all present resulted. After the routine business was disposed of, we were invited into the dining room, where Mrs. Teubner had prepared an elegant spread, which to say was enjoyed by all, would be putting it mildly. After extending a vote of thanks to Mrs. Teubner for her hospitality, we adjourned to the office again to perfect arrangements for the next meeting which was decided to be held on December 7th, in Ventura at the office of Dr. Stockwell.

J. C. BYNUM,
Secretary-Treasurer.

ADDITIONAL NEW AND NON-OFFICIAL REMEDIES.

To the list of articles accepted by the Council, which will appear in the Journal November 7, there have been added the following:

Tabloid Ergotinine Citrate (Burroughs Wellcome & Co.).

Tabloid Ergotinine Citrate & Strychnine Sulphate (Burroughs Wellcome & Co.).

Tabloid Hypophosphites Compound (Burroughs Wellcome & Co.).

Enule Soap Compound (Burroughs Wellcome & Co.).

Gr. Eff. Caffeine & Potass.-Bromide Comp. (H. K. Mulford Co.).

Gr. Eff. Carlsbad Salt (Artificial) (H. K. Mulford Co.).

Gr. Eff. Sodium Sulphate (H. K. Mulford Co.).

Eusemin (Leonard A. Seltzer) (H. K. Mulford Co.).

From the former list, Syrup Hydriodic Acid (R. W. Gardner) has been omitted.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, EXAMINATION OF APPLICANTS,

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street SE., Washington, D. C., Monday, January 11, 1909, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and, when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination as vacancies occur in that grade.

Assistant surgeons receive $1,600, passed assistant surgeons $2,000, and surgeons $2,500 a year. Officers are entitled to furnish quarters for themselves and their families, or, at stations where quarters cannot be provided, they receive commutation at the rate of thirty, forty, and fifty dollars a month, according to grade.

All grades above that of assistant surgeon receive longevity pay, 10 per cent in addition to the regular salary for every five years' service up to 40 per cent after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

PURE FOOD EXHIBIT OF THE STATE BOARD OF HEALTH.

In the October issue of the State Journal we commented on the Pure Food Exhibit at the State Fair, and erroneously gave the credit for this to the Public Health Committee of the State Society. Dr. Foster, Secretary of the State Board of Health, has very kindly called the attention of the Journal to the fact that the exhibit referred to, with the exception of a collection of laws and reports, was prepared entirely by the State Board of Health. It is a pleasure to make this acknowledgement, for the reason that we are only too glad to welcome any additional authority given to or activity of the State Board of Health.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

At the last meeting of this association, Dr. J. A. Witherspoon of Nashville, Tenn., was elected president, and Dr. Henry Enos Tuley of Louisville, Ky., was re-elected secretary. The next meeting will be held in St. Louis, Mo., October, 1909.

FOUND, POCKET CASE OF INSTRUMENTS.

Dr. Wm. F. Freeman, Box 147, The Needles, advises the Journal that he has in his possession a pocket case of instruments which was found in San Francisco, about a year ago. Any one having lost such a piece of property should correspond with Dr. Freeman, giving a description of the article lost.

COLORADO SOUVENIR BOOK ON TUBERCULOSIS.

Members of the Colorado anti-Tuberculosis organization, have prepared a book of statistical information, with climatic maps, weather charts, etc., which was distributed to those attending the International Congress. Those who did not attend may secure a copy by addressing Dr. Wm. N. Beggs, 823 14th street, Denver, and remitting 25c.

FER-DON, THE FAKIR AND HIS TAPE WORMS.

Some interesting affidavits appeared in the Eureka Californian, of August 22d. At this time the "wonderful" Fer-Don, who is now located in Oakland, we believe, was doing business in Eureka. At one of his meetings he presented a very large tape worm, which he announced had been removed from one of his patients. The affidavits disclosed the fact that this was obtained from a butcher who found it in the intestine of a sheep.

TUBERCULOSIS DIRECTORY.

The Charities Publication Committee, 105 East 22d street, New York, has recently issued a very unique volume under the title of "The Campaign Against Tuberculosis." The book is really a directory of all institutions and organizations dealing with tuberculosis, and includes a digest of legislation on the subject. Copies may be secured by remitting $1.00 to the addres given above.

CALIFORNIA BULLETIN ON TUBERCULOSIS

The California Association for the Study and Prevention of Tuberculosis, president, Mr. C. B. Boothe, Los Angeles, secretary, Dr. Geo. H. Kress, Los Angeles, has begun the publication of a bi-monthly journal, entitled "The Bulletin of the California Association for the Study and Prevention of Tuberculosis." The subscription price is $1.00 a year, which includes membership in the association.

CUT RATE COMPETITION.

The following letter, which certainly is the limit for cold commercial impudence, was received by a San Francisco physician. The letter is dated, Glasgow, the 24th of July, 1908, and bears at the top the heading, Burrell & Son, Steamship Managers:

> "We shall be glad to hear at your earliest convenience what your fee would be for medical attendance to our steamers, calling at San Francisco. Your fee to include all medicine, and to be irrespective of the number of visits made."

We understand that a number of physicians in San Francisco received similar letters, and it would appear as though Burrell & Son desired to secure **competitive bids.**

STATE SOCIETY COMMITTEES.

The elected and appointed committees of the State Society are as follows:

Committee on Arrangements—William Simpson (chairman), San Jose; T. C. Edwards, Salinas, and Saxton T. Pope, Watsonville.

Committee on Cancer Investigation—W. F. B. Wakefield (chairman), San Francisco; Martin H. Fischer, Oakland, and Emmet Rixford, San Francisco.

Committee on Medical Education—F. Dudley Tait (chairman), Jas. H. Parkinson, Sacramento, and Andrew S. Lobingier, Los Angeles.

Committee on the Prevention of Venereal Diseases—A. B. Grosse (chairman), San Francisco; J. C. Spencer, San Francisco, and A. E. Osborne, Santa Clara.

Public Health Commission—F. C. E. Mattison (chairman), Pasadena; Geo. H. Kress and L. M. Powers, Los Angeles; Stanley P. Black, Pasadena, and W. F. Snow, Stanford.

Committee on Publication—Philip Mills Jones (chairman), Langley Porter, John Spencer and Harry M. Sherman, San Francisco, and Martin Fischer, Oakland.

Committee on Public Policy and Legislation—F. B. Carpenter (chairman), San Francisco; J. H. Parkinson and Jas. W. James, Sacramento.

Committee on Scientific Work—Martin Fischer (chairman), Livermore; A. W. Hewlett and Harry M. Sherman, San Francisco, and C. Van Zwalenburg, Riverside.

Committee on Tuberculosis—George H. Evans (chairman), H. C. Moffitt, C. M. Cooper and Rene Bine, San Francisco, and F. M. Pottenger, Monrovia.

Diseases of the Nose, Throat and Ear, Medical and Surgical. By William Lincoln Ballenger, M. D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois; Fellow of the American Laryngological Association; Fellow of the American Laryngological, Rhinological and Otological Association; Fellow of the American Academy of Ophthalmology and Otolaryngology, etc. Illustrated with 471 engravings and 16 plates. Lea and Febiger, 1908.

Dr. Ballenger has given us a book that truly embodies what is new and what is to be recommended in these special branches of medicine. His own experience and choice of methods runs through the pages, an example and guide to his readers. Too much can not be said in favor of this kind of a publication which is not a compilation but an authoritative treatise giving the result of personal experience. The chapter on the choice of septum operations with the surgical correction of obstructive lesions of the septum gives the various methods in vogue, but is also a good guide as to the method to be pursued in a given case. The reader is not led to suppose that the submucous resection or whatever the method described is the best for all cases. The principles of treatment of inflammations and the modalities for promoting the reactions of inflammations are well described, the author quoting Adami extensively. All of the newer remedies such as the Leukodescent Light, Biers treatment and the Opsonic Index and Vaccine Treatment of Infectious Diseases receive careful attention.

The submucous resection of the inferior turbinate bone is carefully described, but the reviewer feels that very few have the necessary dexterity to carry it out. Naturally, the swivel knife receives marked attention and while its place is well established in the submucous resection of the septal cartilage, I feel that the multiplicity of uses to which it is put, as, for example, in the removal of the middle turbinal, page 155, are not to be recommended. The surgery of the accessory sinuses is complete and well illustrated. A chapter is devoted to the surgical correction of external deformities, a subject heretofore but poorly discussed.

The radical excision of the tonsils is up to date, the author giving his method of using only a scalpel. His ideas are sane on this subject and he believes that only the diseased portion of a tonsil need be removed, i. e., if one can take out all of the diseased tonsillar tissue leaving the capsule, the latter is preferable. The larynx and ear are equally well described and in keeping with the tone of the book. The various plastic mastoid methods are made very simple. The surgery of the facial and hypoglossal nerves with a detailed technic is very complete. Numerous illustrations and a number of colored plates help to make this a treatise on the above subjects which would be difficult to duplicate.

W. S. F.

Borderland Studies. Miscellaneous Addresses and Essays Pertaining to Medicine and the Medical Profession, and Their Relations to General Science and Thought. By George A. Gould, M. D., Former Editor of The Medical News, The Philadelphia Medical Journal, Etc., Etc.

The versatility of Dr. George Gould is no where more evident than in this collection of miscellaneous addresses and essays, all of them suggestive, instructive and charming. They cover a wide range, from King Arthur's Medicine to Child Fetiches and Vocation. The opening essay contains a history and comparative study of the dwellings of human beings at various epochs and in different countries, in their relation to fresh air and light. This is really a study in hygiene. The next one, entitled "A System of Personal Biological Examination, Etc.," is a plea for a thorough-going and repetitive system of physical and pathological examinations, which will give us ultimately a general and comprehensive science of anthropology, based upon all the data, morphological, physiological and pathological of the entire individual.

"Phophecy and prognosis are based upon a thorough knowledge of the past and present fact, a rigid understanding in a scientific sense of the evolution of the organism and of its present departures from a normal standard. For his children a foresighted man must wish such an accounting, such a prophecy and prognosis; and as to himself every intelligent adult, when he awakens to scientific consciousness, must try to look forward through the years, and to reckon up his powers and possibilities of life. The crowning work of scientists is to turn science into prescience. Unification of the sciences dealing with the conduct of life; the making practical and useful our knowledge of the individual organism, and lastly, to establish a scientific prescience—such are the ideals of a living anthropology."

The third essay on the "Life Study of Patients" deals with the biographic method of studying disease. Dr. Gould's idea is that the comparative study of a large number of clinical life histories would throw light on the etiology of many diseases. This essay at once recalls the numerous interesting, though at times partisan, writings of Dr. Gould on eye-strain; and the opening sentence of Spencer's "First Principles": "We too often forget, not only is there 'a soul of goodness in things evil,' but very generally also a soul of truth in things erroneous."

The fourth essay on "The Seven Deadly Sins of Civilization" deals with the etiological importance of tobacco, tea, coffee, alcohol, sugar, venereal diseases, lack of fresh air and light, and eye-strain in the production of disease, while the next one on "Disease and Sin" largely concerns itself with "the social evil." That on "King Arthur's Medicine" is a causerie on medical practice and experiences of that time. The chapter on "Some Intellectual Weeds of

American Growth" is mainly a running commentary on some of the fads of the nouveau siecle and pretentions of a host of charlatans. Following this are two very interesting chapters, one entitled "Concerning Crank Physicians," the other "Some Ethical Questions." The essay on "History and Physchology of Words" is unusually interesting, while the chapter on "Style" should be read by every writer on medical subjects. The chapter on "Child Fetiches" is a contribution to the psychology of child life and the following and last chapter on "Vocation" is an address delivered before the Medical Department of the University of Syracuse. The contents of this chapter may be summed up by saying that medicine is a "noble profession, but a miserable trade."

A. J. L.

Practical Life Insurance Examination. By Murray Elliott Ramsey, M. D. J. B. Lippincott Company, Philadelphia and London. 1908.

While medical examinations for the purpose of life insurance require nothing more than a complete and accurate physical examination and the determination of the risk of the application, based on the history and physical findings, nevertheless this branch of medicine seems to have developed into a specialty. The author of this volume has written this book believing that there is a special need for it, and he has given particular attention to physical diagnosis and prognosis of the diseases of the chest and abdomen, for these regions constitute the seat of organs and structures which enter most vitally into the welfare of an insurance company. So far as the reviewer has been able to determine, there is little in the book that can not be found in any good work on physical diagnosis. The only original part is the last chapter which deals with the insurance of "Sub-standard Lives." This constitutes the only obvious raison d'etre for the existence of the book. A. J. L.

Examination of the Ear. By Selden Spencer, A. B., M. D., Instructor of Otology, Washington University; Aural Surgeon to the Martha Parsons Free Hospital for Children. C. V. Mosby Medical Book and Publishing Company, 1908.

This is a small book about 65 pages, designed for use in an undergraduate course of otology. Since the ability to make an intelligent inspection of the eardrum, head, tympanic cavity and otitic region, as well as the nasal cavities and pharynx is essential to diagnosis, considerable space has been devoted to the anatomy of these parts; and the text is made clear by a number of very excellent illustrations. Brief descriptions of the methods of examination of the ear have been included. While the book contains little that is either original or complete, its use to beginners may be considerable. A. J. L.

Electrical Treatment. By Wilfred Harris, M. D., F. R. C. P., Physician to Out-Patients, Physician to the Department for Nervous Diseases, and Lecturer on Neurology, St. Mary's Hospital, etc. Illustrated. W. T. Keener and Co. 1908.

This small volume belongs to a well-known series which has already given us those excellent monographs on Light and X-Ray Treatment of Skin Diseases; Serums, Vaccines and Toxines in Treatment and Diagnosis; Organotherapy, and the Open-Air Treatment of Pulmonary Tuberculosis. In the present book the same conciseness and clearness of exposition which characterized the other volumes of the series is here evident. Anyone interested in the subjects will, by studying the work, have little difficulty in grasping its essential points; and special attention has been given to what may be done in medical practice with a good faradic and galvanic battery.

CHANGES OF ADRESSES.

DECEMBER CHANGES.

Regensburger, Alfred E., from 2090 Pine st., to 166 Geary st. (Whittel Bldg.), San Francisco.

Keck, Fred'k C., returned from Europe.

Manson, Josef I., from 2425 Pine st., to 1915 Pacific ave., San Francisco.

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Wiel, Harry I., from 943 Van Ness ave., to 135 Stockton st. (Butler Bldg.), San Francisco.

Fraser, Mary Lesley, from 213 Sacramento st., Vallejo, Cal., to 413 Georgia st., Vallejo, Cal.

Thomas, Benj., from address unknown to Palo Alto, Cal.

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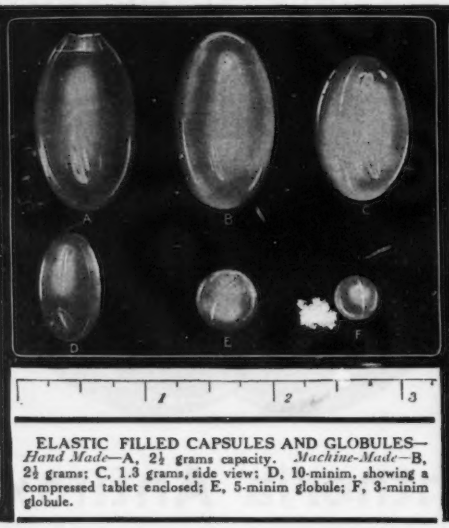

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